DETAILED TABLES

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SMEs in Europe

Competitiveness, innovation and the knowledge-driven society

Data 1996–2001

4

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THEME 4
Industry, trade and services

A great deal of additional information on the European Union is available on the Internet.
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FOREWORD

At the Lisbon European Council in March 2000, the European Union set itself an ambitious goal “to become the most competitive and dynamic knowledge-driven economy in the world” by 2010, creating better jobs and greater social cohesion. Enterprise policy is one area that will play a major role in setting the conditions for this objective to be met. In particular, the promotion of small and medium-sized enterprises (SMEs) is thought to be fundamental when fostering an environment that encourages economic growth and job opportunities.

The European Charter for Small Enterprises, adopted by the General Affairs Council on 13 June 2000 and embraced by the Feira European Council on 19-20 June 2000 called upon Member States and the European Commission to undertake action in a number of areas to support and encourage small enterprises - this Charter is central to achieving the Lisbon objective.

The present publication is the first of a new series on SMEs and presents a snapshot of the structure, performance and conduct of SMEs in Europe; it is intended to provide users with a concise document that helps track the European Union's drive towards a competitive, innovative and knowledge-driven economy. It provides quantitative information from a variety of sources and focuses in particular on Structural Business Statistics (SBS), the Continuing Vocational Training Survey (CVTS), a pilot survey on e-commerce and the Community Innovation Survey (CIS). To supplement the main body of work, a statistical annex with information on the Candidate countries is also included.

Pedro Díaz Muñoz
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SMEs in Europe - competitiveness, innovation and the knowledge-driven society

This publication has been produced by unit D2 of Eurostat, responsible for structural business statistics. The opinions expressed are those of the individual authors alone and do not necessarily reflect the position of the European Commission.

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http://www.europa.eu.int/comm/eurostat

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http://www.europa.eu.int

INTRODUCTION

"SMEs in Europe - competitiveness, innovation and the knowledge-driven society" is the first in a series of at least three Detailed Tables publications that will focus on the subject of small and medium-sized enterprises (SMEs). As such, this new series will replace Eurostat's "Enterprises in Europe" publication, of which there were six reports during the last decade.

The aim of this publication is to focus on topical issues that are of importance to SMEs by delivering a broad range of data to users from a variety of sources. Indeed, this publication draws on information from a disparate collection of sources across several Directorates of Eurostat, as well as information from other Directorate-Generals of the European Commission.

CONTENTS OF THE PUBLICATION

"SMEs in Europe - competitiveness, innovation and the knowledge-driven society" is divided into four main sections:

1. An introduction to policy issues surrounding SMEs;
2. The main body of work that focuses on issues of competitiveness, innovation and the knowledge-driven society;
3. A statistical annex that presents comparative information about SMEs in the Candidate countries;
4. A reference section that contains material such as methodological notes, data of a general nature (for example, exchange rates, population, GDP) and a list of abbreviations.

The publication is available in paper and PDF formats; it is produced in English only.

QUICK GUIDE TO THE STATISTICS

Time frame

The data was extracted from Eurostat's reference database (NewCronos) during the first three weeks of September 2002. The accompanying text was written during September and the first half of October 2002. The most recent reference period available was generally used to construct the tables and figures presented, with the majority of data showing snap-shots of the latest situation (rather than time-series).

Eurostat databases are updated on a frequent basis and it is possible that fresher data is now available within the reference database, NewCronos. Users wishing to access this data are invited to consult one of the Eurostat Data Shops that are listed at the end of this publication. This list is updated on the Internet at the following address:
http://www.europa.eu.int/comm/eurostat

Main data sources

The table below summarises the main data sources that were used in the compilation of this publication. For methodological notes on each source please refer to page 63.

NACE

NACE is a hierarchical classification of economic activities[1] that is made up of Sections (1-letter codes), Sub-sections (2-letter codes), Divisions (2-digit codes), Groups (3-digit codes) and Classes (4-digit codes). An extract of NACE is provided at the end of this publication on page 70.

The data presented in this publication is often highly aggregated, in part due to space constraints and in part because detailed data are not available from all sources. Hence, it is possible that more detailed activity breakdowns are available when consulting the original source database - for more details, please contact one of the Eurostat Data Shops.

(1) Published by Eurostat, ISBN 92-826-8767-8, available from the usual outlets for Commission publications.

Geographical coverage

EU totals in this publication cover all 15 Member States, with footnotes being added when a partial total is created from an incomplete set of country information. Data for Germany is on a post-unification basis, unless otherwise stated.

Non-availability

In tables, the colon (:) is used to represent data that is not available, either because it has not been provided to Eurostat or because it is confidential. In figures, all missing data is footnoted.

Exchange rates

All monetary values are reported in ECU/EUR terms, with national currencies converted using average exchange rates prevailing for the year in question. As of 1 January 1999, eleven Member States entered into an economic and monetary union (EMU), forming what has become known as the euro-zone. Technically, monetary values prior to this date should continue to be denominated in ECU terms and afterwards they should be denominated in euro (EUR) terms. However, as the conversion rate was 1 ECU = 1 EUR, for practical purposes the terms may be interchanged. This publication denotes all such monetary series in EUR terms. On 1 January 2001, Greece also became a member of the euro-zone.

Main data sources used in the publication

Data source	Database	Section of t publicatio	Period covered	Furthe informatio
EUROSTAT	Structural Business Statistics (SBS)	2.1 and 2.2	1995-2000	http://www.europa.eu.int/comm/eurostat/
DG ECONOMIC AND FINANCIAL AFFAIRS	Bank for the Accounts of Companies Harmonised (BACH)	2.2	2000	http://www.europa.eu.int/comm/economy_finance/indicators/bachdatabase_en.htm
EUROSTAT	Community Innovation Survey (CIS2)	2.3	1996	http://www.europa.eu.int/comm/eurostat/
EUROSTAT	E-commerce	2.4	2001	http://www.europa.eu.int/comm/eurostat/
EUROSTAT	Continuing Vocational Training Survey (CVTS)	2.5	1999	http://www.europa.eu.int/comm/eurostat/
DG PRESS AND COMMUNICATION	Various Eurobarometer studies	2.2, 2.3, 2.4 and 2.5	2000 and 2001	http://www.europa.eu.int/comm/public_opinion/archives_en.htm

1. THE INTEREST IN SMEs

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WHAT ARE SMEs?

A Commission Recommendation from 3 April 1996 (COM(96) 261 final) provides a definition of small and medium-sized enterprises, namely[2]:

- Micro-enterprises: employ fewer than 10 persons;
- Small enterprises: employ fewer than 49 persons and have either an annual turnover not exceeding 7 million EUR, or an annual balance-sheet total not exceeding 5 million EUR;
- Medium-sized enterprises: employ fewer than 249 persons and have either an annual turnover not exceeding 40 million EUR, or an annual balance-sheet total not exceeding 27 million EUR;
- Various rules on enterprise independence exist, whereby SMEs that are controlled by larger enterprises should not qualify for aid directed at independent SMEs.

This Recommendation foresees adaptation, and in 2001 the Enterprise Directorate-General of the European Commission made a proposal to increase the level of the financial ceilings in the definition. At the same time, special attention was given to reflecting on the definition of micro enterprises so that this group would include all enterprises, whatever their legal status (thus including for the first time family and craft enterprises in the definition). Anti-circumvention measures have also been recommended to ensure that only the enterprises facing the specific handicaps of SMEs would be considered as SMEs.

This approach aims to define a clearer typology of enterprises (autonomous, partner, linked enterprises) that should make it possible to grant more favourable treatment than under the 1996 Recommendation, with the ultimate aim of encouraging innovation and internationalisation among SMEs. The proposal put forward by the Enterprise Directorate-General does not foresee any change to size class thresholds in terms of employment. The main proposals are set out in a new draft Recommendation that closed its second consultation phase in September 2002. For more information, please consult: *http://www.europa.eu.int/comm/enterprise/consultations/sme_definition/index.htm*

Throughout this publication every attempt has been made to standardise the presentation of data according to the employment criteria in these definitions. However, it may be the case that micro and small enterprises are not surveyed. When this occurs, the definition of these size classes may vary from the standardised definition (for example, small enterprises may be defined as enterprises with 20-49 persons employed, instead of 10-49 persons employed). In every table and figure that is published, size class thresholds are clearly specified in the titles or axis labels.

(2) It should be noted that for the purpose of presenting statistical information these guidelines are usually adapted such that the following mutually exclusive size class groupings are created for the purpose of analysis: micro (less than 10), small (10-49), medium (50-249) and large (250+).

Defining SMEs - Commission Recommendation 95/280/EC and its proposed adaptation

	Number of occupied pers less tha (unchanged from the 1996 Recommendation)	Recommendation 96/280/EC (not exceeding)		Updated proposal (not exceeding)	
		Balance sheet (EUR)	Turnover (EUR)	Balance sheet (EUR)	Turnover (EUR
Micro enterprise	10	-	-	2 million	2 million
Small enterprise	50	5 million	7 million	10 million	10 million
Medium-sized enterprise	250	27 million	40 million	43 million	50 million

Source: http://www.europa.eu.int/comm/enterprise/consultations/sme_definition/index.htm

ECONOMIC CONTEXT

Technological change, in particular the creation of information highways, has brought new opportunities and challenges for many enterprises. These changes, driven by the introduction of information and communication technologies (ICT), have increased access to a wide knowledge base, as well as creating market opportunities and innovative forms of industrial organisation. At the same time, investment in human capital, through increased opportunities for education and training, has also led to a more qualified, and more mobile, workforce.

Most economic commentators agree that successful enterprises in the modern economy have developed through the application of knowledge and the generation of intangible assets. The process of innovation should not be viewed simply as bringing new products or services to market, but also concerns operations including advertising, industrial organisation, management, workflow, training and customer service. In the service sector of the economy, in particular, these forms of innovation can be developed in unpredictable ways that have the potential to transform a business.

SMEs often have more flexibility in their operations, and through networking they have the possibility to pool their talents and combine the advantages of small-scale, local presence with economies of scale and scope, developing industrial clusters (for example, science parks) that thrive on the cross-fertilisation of ideas and knowledge.

On the other hand, SMEs face difficulties in managing the rapid expansion of information that is available in today's economy. If they expand their local markets they are likely to face challenges in understanding new customs and regulations, such as how to obtain information on cross-border taxation, transactions security or dispute settlements. The cost of acquiring information can be disproportionately high for small enterprises and uncertainty is compounded by a lack of access to capital markets. Furthermore, the cash flow of SMEs may also fluctuate considerably more than that of larger enterprises, compounding still further the uncertainty that can restrict their development.

EUROPEAN COMMISSION POLICIES

In recent years, the European Commission has given high priority to promoting SMEs. The SME dimension is now an integral part of many Community policies and SMEs are key targets of many EU programmes.

Europe's competitiveness is strongly linked to its position in innovation, entrepreneurship and the diffusion of ICT. However, the position of the Member States according to certain indicators shows a wide dispersion around the EU average; some indicators show certain EU countries as world leaders within a particular domain, while other countries trail considerably behind.

To understand the factors that contribute to competitive performance, much use has been made of benchmarking as a tool to identify best practices. Benchmarking provides a means of measuring the performance of a country, region or enterprise against its competitors. In response to the Lisbon European Council, a series of scoreboard indicators have been launched to provide policy makers with relevant information that can help them assess the EU's journey towards its goal of becoming “the most competitive and dynamic knowledge-driven economy in the world” by 2010. These scoreboards use a broad cross-section of indicators to measure the performance of each country as regards innovation, entrepreneurship or the use of technology.

ENTERPRISE DIRECTORATE-GENERAL

Innovation Scoreboard

In response to the Lisbon European Council of March 2000, the Innovation Scoreboard was set up to provide a benchmark of the innovative performance of the Member States. It builds on the “structural indicators” database that was launched in the European Commission's Communication “Realising the potential of the European Union - consolidating and extending the Lisbon strategy”[3]. The Scoreboard measures innovation performance through a set of 17 indicators (likely to increase with the next release of the Scoreboard) that cover four areas: human resources; knowledge creation; transmission and application of new knowledge; innovation finance, output and markets. For more information, please consult:
http://www.trendchart.cordis.lu/Scoreboard/scoreboard.htm

(3) COM(2001) 79.

Entrepreneurship

Specific problems, such as a lack of capital, risk adverse attitudes from providers of finance, underdeveloped skills in business management and limited market contacts are thought to hinder start-ups, deterring the creation of SMEs, and slowing economic growth and employment creation.

In December 2000, the Council adopted a new Multiannual Programme on Enterprise and Entrepreneurship, with a specific programme for SMEs for 2001-2005. The programme focused, in particular, on new economy challenges and builds on work carried out under the Third Multiannual Programme for SMEs (1997-2000) which promotes entrepreneurship as one of its central themes (supporting entrepreneurs who are women, young or from ethnic minorities).

Entrepreneurship is also one of the main subject areas covered by DG Enterprise's report, Benchmarking Enterprise Policy: Results from the 2001 Scoreboard[4]. It includes information on birth rates of enterprises, female entrepreneurs, the propensity towards self-employment, barriers to entrepreneurship, business registration (time requirements and cost) and business incubators. For more information, please consult:
http://www.europa.eu.int/comm/enterprise/enterprise_policy/mult_entr_programme/overview.htm#references

Annual Competitiveness Report

The European Commission has produced six reports on the state of competitiveness in the European economy since a 1994 Industry Council Resolution led to its inception. These reports do not specifically relate to SMEs, however they discuss a wide variety of policy issues that are of great importance to the development of SMEs. In particular, recent editions have focused upon the use of intangibles, such as R&D and proprietary know-how, intellectual property rights, workforce skills, supply networks and brands; all of which are thought to play an increasingly important role in influencing competitiveness. For more information, please consult:
http://www.europa.eu.int/comm/enterprise/library/lib-competitiveness/libr-competitiveness.html

(4) SEC(2001) 1900.

European Charter for Small Enterprises

The European Charter for Small Enterprises was adopted by the Feira European Council on 19-20 June 2000. It calls upon Member States and the Commission to take action in a number of areas to support and encourage small enterprises. The Charter aims to focus on factors that are considered critical to the development of SMEs, including: education for entrepreneurship; cheaper and faster business start-up; better legislation and regulation; increasing the availability of skills; improving on-line access; getting more out of the Single Market; taxation and financial measures; strengthening the technological capacity of small enterprises; making use of successful e-business models; developing top-class small business support; and developing stronger, more effective representation of small enterprises' interests.

The European Commission has undertaken to report annually on the progress being made towards these goals through an Implementation Report. For more information, please consult:
http://www.europa.eu.int/comm/enterprise/enterprise_policy/charter/index.htm

Observatory of European SMEs

The Observatory of European SMEs was established by the European Commission in December 1992 to improve information on the economic performance of SMEs in Europe. The Observatory has produced a series of reports on SME-related issues that are published on a non-regular basis. For more information, please consult:
http://www.europa.eu.int/comm/enterprise/enterprise_policy/analysis/observatory.htm

RESEARCH DIRECTORATE-GENERAL

SMEs form a dynamic group of enterprises and to survive they often need to develop new technologies themselves or gain access to new technologies that are developed by others. The European Union's latest five-year action plan (1998-2002) for research and technological development (the Fifth Research Framework Programme or FP5) includes specific measures to encourage small and medium-sized enterprises to participate in Community research. In particular, the FP5 envisages helping European SMEs find research solutions to major social and economic problems such as employment, health, the environment, communications and mobility. The programme provides financial awards that cover part of the costs of conceiving an EU research project or co-operative research project (between SMEs from more than one Member State). For more information, please consult:
http://www.cordis.lu/fp5/programmes.htm

INFORMATION SOCIETY DIRECTORATE-GENERAL

The importance of ICT is thought to be fundamental to the competitiveness of enterprises and economies. The European Commission aims to accelerate the take-up and use of ICT, in particular, encouraging the development of e-commerce. In May 2002, the Commission adopted a Communication on "eEurope 2005: an Information Society for all". For more information, please consult:
http://www.europa.eu.int/information_society/eeurope/news_library/eeurope2005/index_en.htm

EDUCATION AND TRAINING DIRECTORATE-GENERAL

The Feira European Council in June 2000 called upon the European Commission and Member States to define a strategy to allow all Europeans access to lifelong learning. This notion covers educational activities at any time of life and in a wide range of environments (including traditional establishments such as schools, universities and vocational training centres, as well as the workplace and the home). The aim of the programme is to encourage the development of knowledge and wide range of skills (personal, civic, social or employment-related).

Building up partnerships, analysing learning requirements, making learning more accessible, giving learning a higher profile and introducing quality controls and indicators to measure progress are amongst some of the measures recognised by the European Commission in its attempts to promote lifelong learning. Several actions contribute to this goal, including work on the future objectives for education systems, a European employment strategy, a European social agenda and action plans relating to skills, mobility and eLearning. Furthermore, significant contributions are made by programmes such as Erasmus (encouraging higher education in a foreign country) and Leonardo da Vinci (a Community vocational training action programme). For more information, please consult:
http://www.europa.eu.int/comm/education/index_en.html

OTHER INTERNATIONAL ORGANISATIONS

OECD

In 2000, the OECD organised a conference on the topic of enhancing the competitiveness of SMEs in the global economy, which led to the adoption of the Bologna Charter, which put forward policy instruments and initiatives for improving the business environment of SMEs. The conference focused in particular on trying "to increase understanding of the issues and policies related to SME competitiveness in the global economy, with particular focus on the role of innovation, territorial/local clusters and industrial districts, and e-commerce". The conference also considered the importance of SMEs in the Central and Eastern European economies. For more information, please consult:
http://www.oecd.org/EN/document/0,,EN-document-37-nodirectorate-no-20-1360-7,00.html

The OECD produces a publication entitled the "OECD Small and Medium Enterprise Outlook" that provides statistics and covers policy trends. For more information, please consult:
http://www.oecd.org/EN/about/0,,EN-about-37-nodirectorate-no-no-no-7,00.html

GLOBAL INFORMATION NETWORK FOR SMEs

The G7 Ministerial Conference on the Information Society[5] on 25 and 26 February 1995 agreed to execute 11 joint projects. One of the projects was the "Global Marketplace for SMEs", part of which is the "Global Information Network for SMEs", a project that is intended "to contribute to developing an environment where SMEs can exchange information on products, technologies, human resources, etc. freely, overcoming obstacles of distance and borders". For more information, please consult:
http://www.gin.sme.ne.jp/introe.html

(5) Attended by ministers of the G7 (Canada, France, Germany, Italy, Japan, the United Kingdom and the United States of America) and Members of the European Commission.

2 ■ SMEs IN EUROPE - COMPETITIVENESS, INNOVATION AND THE KNOWLEDGE-DRIVEN SOCIETY

2.1: BASIC INDICATORS - AN INTRODUCTION

SMEs IN THE EU, JAPAN AND USA - INTERNATIONAL PROFILE

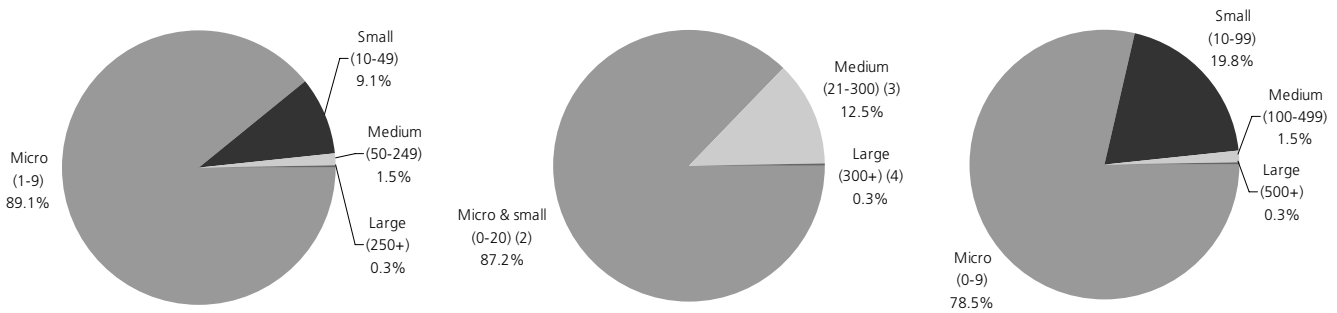
The overwhelming majority of enterprises in the EU are SMEs, some 99.7% of the total. It is perhaps more important to study their contribution to value added, turnover and employment, which varies considerably - both between countries and across different economic activities. Before looking at specific indicators in relation to competitiveness, innovation and the knowledge-driven society, this section briefly outlines some basic facts that help describe the structure of the EU's business community: how many enterprises there are; how many persons they employ; what their turnover is and what their value added is.

Almost nine out of ten enterprises (89.1%) in the EU employ less than ten persons; with the vast majority of the remaining enterprises employing fewer than 50 persons (9.1%) - see figure 2.1.1. Indeed, just 0.3% of the enterprises in the EU are classified as large enterprises (employing at least 250 persons).

Despite large enterprises accounting for just 0.3% of the enterprise stock in the EU, they employed just over one-third (33.8%) of all those employed in the business economy - see figure 2.1.2. This was the largest share among the four enterprise size classes, with micro enterprises providing the next highest share (28.7% of those employed).

When studying the relative importance and size of enterprises, it is also necessary to bear in mind their economic weight, for example by using monetary measures such as turnover or value added. These economic measures generally give more importance to large enterprises. For example, large enterprises accounted for 38.8% of total turnover in the EU, whilst the remaining three size classes each accounted for between 19% and 21% - see figure 2.1.3.

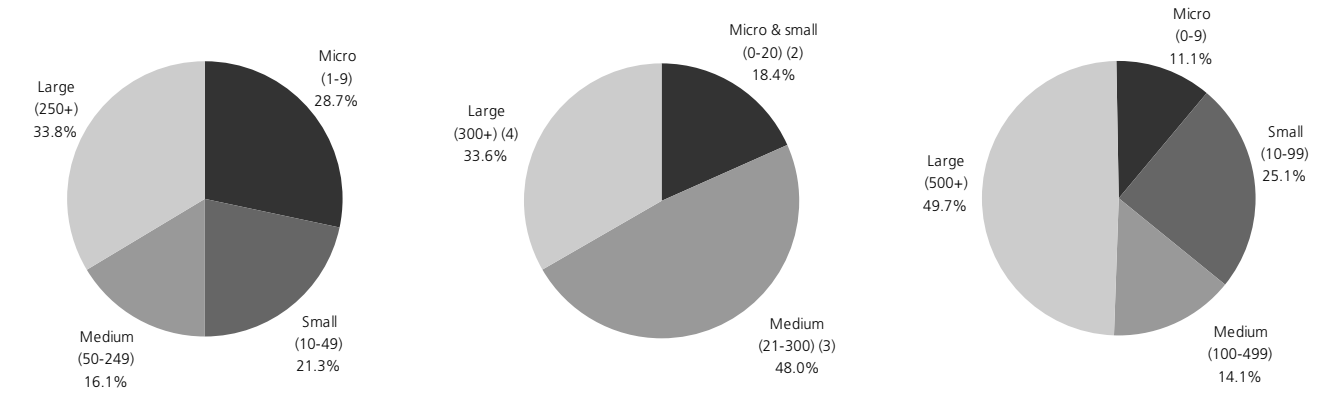
Figure 2.1.1: Share of the number of enterprises in the business enterprise population, latest year available (%) (1)



Europe, 2000 (5) **Japan, 1999** **USA, 1999**

(1) Size classes are defined in terms of employees; EU data in terms of persons employed. (2) 5 or less for wholesale, retail, food service and service sectors. (3) 100 or less for wholesale and service sectors, 50 or less for retail and food service sectors. (4) More than 100 employees for wholesale and service sectors, more than 50 employees for retail and food service sectors. (5) Europe defined as EU-15 and NO; EL and L, not available. Activity coverage is NACE Sections D, F, G, H, I and K. B, DK, D, E, F, NL, A, P and NO, 1999. S, 1998. DK, NACE Sections D and F. D, NACE Sections D, F, G and H. E, NACE Sections D, G, H and K. NL, NACE Sections F, G, H, I and K. P, excluding NACE Section F. NO, NACE Sections D, G, H, I and K.
Source: EU, Eurostat, Structural Business Statistics (theme 4/SBS/sizclass); Japan, JSBRI (Japan Small Business Research Institute) White Paper on Small and Medium Enterprises in Japan, 2001; USA, Statistics of U.S. Business, Bureau of Census

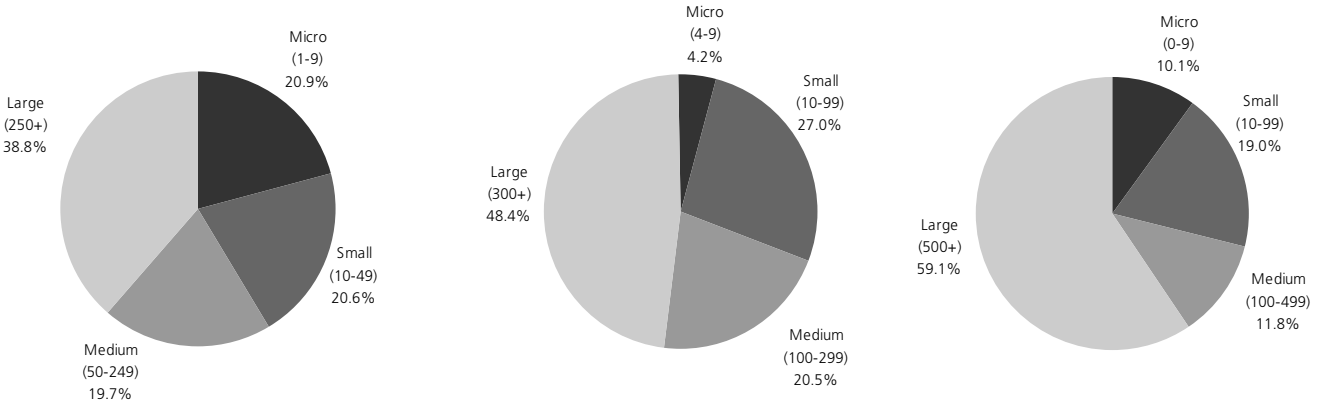
Figure 2.1.2: Share of number of persons employed in the business enterprise population, latest year available (%) (1)



Europe, 2000 (5) **Japan, 1999** **USA, 1999**

(1) Size classes are defined in terms of employees; EU data in terms of persons employed. (2) 5 or less for wholesale, retail, food service and service sectors. (3) 100 or less for wholesale and service sectors, 50 or less for retail and food service sectors. (4) More than 100 employees for wholesale and service sectors, more than 50 employees for retail and food service sectors. (5) Europe defined as EU-15 and NO; EL and L, not available. Activity coverage is NACE Sections D, F, G, H, I and K. B, DK, D, E, F, NL, A, P and NO, 1999. S, 1998. DK, NACE Sections D and F. D, NACE Sections D, F, G and H. E, NACE Sections D, G, H and K. NL, NACE Sections F, G, H, I and K. NO, NACE Sections D, G, H, I and K.
Source: EU, Eurostat, Structural Business Statistics (theme 4/SBS/sizclass); Japan, JSBRI (Japan Small Business Research Institute) White Paper on Small and Medium Enterprises in Japan, 2001; USA, Statistics of U.S. Business, Bureau of Census

Figure 2.1.3: Share of turnover in the total business enterprise population, latest year available (%) (1)



Europe, 2000 (2) **Japan, 1999 (3)** **USA, 1997**

(1) Size classes are defined in terms of employees; EU data in terms of persons employed. (2) Europe defined as EU-15 and NO; EL and L, not available. Activity coverage is NACE Sections D, F, G, H, I and K. B, DK, D, E, F, NL, A, P and NO, 1999. S, 1998. DK, NACE Sections D and F. D, NACE Sections D, F, G and H. E, NACE Sections D, G, H and K. NL, NACE Sections F, G, H, I and K. NO, NACE Sections D, G, H, I and K. (3) Shipments in the manufacturing sector only.
Source: EU, Eurostat, Structural Business Statistics (theme 4/SBS/sizclass); Japan, JSBRI (Japan Small Business Research Institute) White Paper on Small and Medium Enterprises in Japan, 2001; USA, Statistics of U.S. Business, Bureau of Census

One of the most fundamental differences between the structure of enterprises in the EU, USA and Japan is that enterprises in the USA (and Japan to a lesser extent) tend to be much larger on average than they are in the EU. During the last decade, the average number of persons employed in the USA and Japan increased to reach 19.7 and 11.0 per enterprise, respectively, by 1999 - see figure 2.1.4.

In the EU, data are not available for all 15 Member States. However, where available, the average number of persons employed per enterprise in the business economy was situated between 3.7 (in Italy) and 12.1 (in the United Kingdom) - see figure 2.1.5 (note that data for Denmark and Germany show even higher average size, however these figures do not cover the whole of the business economy and may be considered as unrepresentative. The difference may in part be explained by historical factors, such as a high number of small, family-run businesses and sole proprietorships, a situation that is particularly apparent in the southern Member States of the EU (Greece, Spain, Italy and Portugal). Furthermore, factors such as access to capital, through the development of stock markets and venture capital, also has an influence on the type and size of enterprises that exist in each country. There is generally more recourse to these types of finance in northern European countries.

In the USA and Japan the size of the average enterprise is gradually increasing. This trend is not reflected in the four EU countries which can provide a time-series from 1995 onwards (France, Italy, Portugal and Finland) - although it is important to note that the length of these time-series is not really long enough to draw any firm conclusions - see figure 2.1.6. Nevertheless, downsizing and focusing on core activities, coupled with sub-contracting non-core competencies to other enterprises, may explain to some degree why the average size of enterprises in the EU did not increase during the second half of the 1990s.

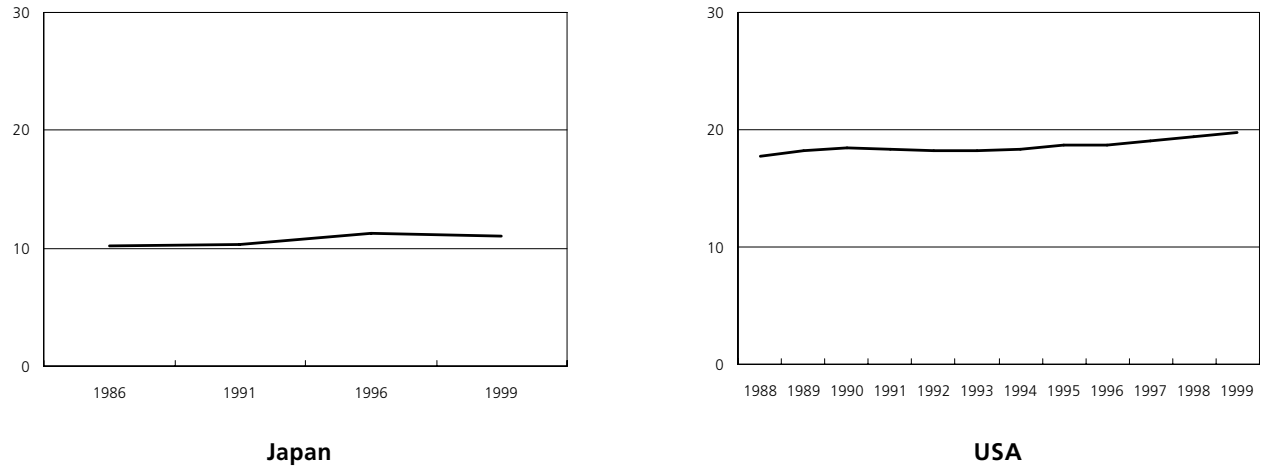
One of the basic assumptions of SME policy is that small and medium-sized enterprises act as a catalyst for the creation of jobs and economic wealth. Certainly the breakdown of employment by enterprise size class confirms that micro enterprises account for an important share (28.7%) of persons employed in the EU - see figure 2.1.2 (on the previous page).

To study this process more closely, Eurostat have set-up a project on business demography which should provide results during the course of 2003 to answer questions such as how many jobs are created by newly-formed enterprises and how the structure of employment in enterprises of different size classes develops over time. Until the results of this longitudinal study are available, structural business statistics (SBS) and labour force survey (LFS) statistics[6] are the two main sources of information that can be used to study employment trends. It is important to note that neither SBS data, nor LFS data, allow the analysis of employment trends for a particular cohort; rather both present grossed up figures on the basis of a population that changes from one reference year to the next. For example, with SBS data, there are changes in enterprise population from one year to the next that result from enterprise births, enterprise deaths, and enterprises moving from one employment size class to another (due to increasing/decreasing employment levels).

The European Employment Strategy focuses on equal opportunities and has led to a number of special measures being introduced to encourage entrepreneurship and small business development amongst particular demographic groups, for example, the unemployed, young persons, ethnic minorities or women.

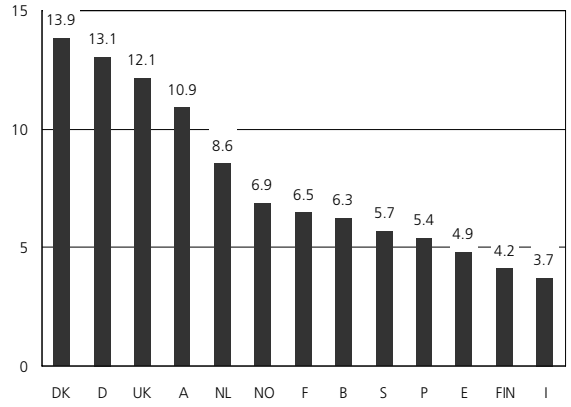
(6) It is important to note that the use of the Labour Force Survey, which is based on a household survey, may produce quite different results to those obtained through enterprise surveys that are the basis of the vast majority of the statistics presented in this publication.

Figure 2.1.4: Development of the average size of enterprises in the business enterprise population (units) (1)



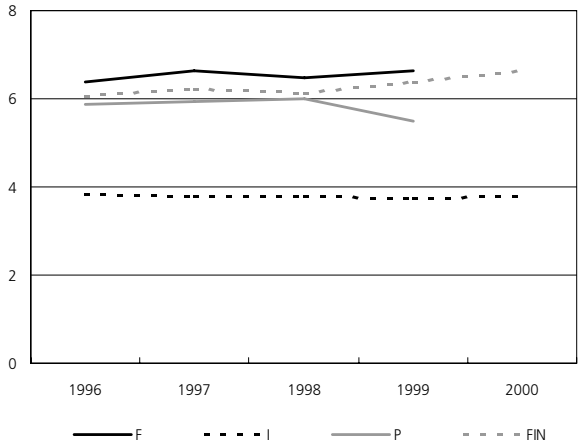
(1) In terms of employees.
Source: Japan, JSBRI (Japan Small Business Research Institute) White Paper on Small and Medium Enterprises in Japan, 2001; USA, Statistics of U.S. Business, Bureau of Census

Figure 2.1.5: Average number of persons employed per enterprise, 2000 (units) (1)



(1) Activity coverage is NACE Sections D, F, G, H, I and K. EL, IRL and L, not available. B, DK, D, E, F, NL, A, P and NO, 1999. S, 1998. DK, NACE Sections D and F. D, NACE Sections D, F, G and H. E, NACE Sections D, G, H and K. NL, NACE Sections F, G, H, I and K. NO, NACE Sections D, G, H, I and K.
Source: Eurostat - Structural Business Statistics (theme 4/SBS/sizclass)

Figure 2.1.6: Development of the average size of enterprises in the business enterprise population in four of the Member States (units) (1)

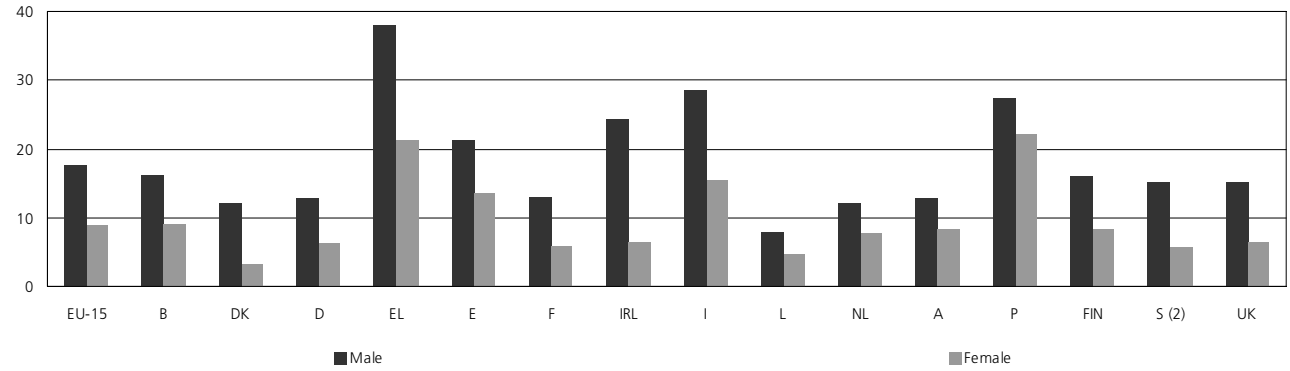


(1) Activity coverage is NACE Sections C, D, E, F, G, H, I and K.
Source: Eurostat - Structural Business Statistics (theme 4/SBS/sizclass)

As an example of the disparities that can exist between different sub-groups of the population, figure 2.1.7 shows the share of the self-employed in total employment in 2001, broken down by gender. On average, the proportion of men that were self-employed was almost double the equivalent rate for women in the EU. There were a number of countries where there was a noticeable difference between the rate of men and women who were self-employed; in particular Denmark, Greece, Ireland, Italy and Sweden.

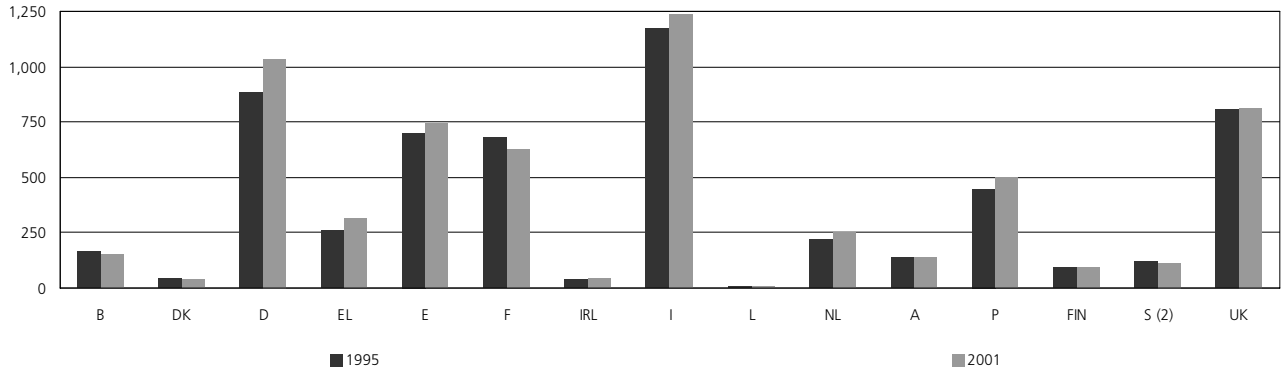
Self-employment rates declined between 1995 and 2001 in the majority of EU countries. This does not necessarily imply that the number of self-employed persons fell. Rather, the reduction can be explained by a more rapid increase in the number of employees and/or family workers over the same period. However, the number of men who were self-employed in the EU declined from 16.4 million to 16.2 million between 1995 and 2001, while the number of self-employed women rose from 5.8 million to 6.1 million - see figure 2.1.8 (overleaf). The largest increases, in absolute terms, for the number of women who were self-employed were recorded in Germany and the four southern Member States. In relative terms, Germany, Greece and Ireland had the highest percentage increases in the number of self-employed women between 1995 and 2001. On the other hand, in Belgium, Denmark, France, Luxembourg and Sweden both the proportion and absolute number of women in self-employment fell over this period.

Figure 2.1.7: Persons in employment who are either employers or self-employed, 2001 (% share of total employment) (1)



(1) Activity coverage is NACE Sections A to Q. (2) 2000.
Source: Eurostat - LFS (NewCronos/theme3/lfs)

Figure 2.1.8: Number of females who are either employers or self-employed, 1995 and 2001 (thousands) (1)



(1) Activity coverage is NACE Sections A to Q. (2) 2000.
Source: Eurostat - LFS (NewCronos/theme3/lfs)

SMEs IN THE EU - COUNTRY PROFILE

Main indicators concerning the business enterprise population (NACE Sections C to I and K) are presented in table 2.1.1. It is important to note that the activity coverage may vary between countries due to poor data availability for certain NACE Sections, and as a result the true size of the business economy in certain countries is considerably under-reported.

There are significant national differences across the EU as regards enterprise density, in other words the average number of enterprises per inhabitant. One of the most noticeable features is the north-south divide, with micro enterprises particularly highly represented in the southern Member States; these enterprises are often found operating in construction, distribution or business services sectors - see map 2.1.1.

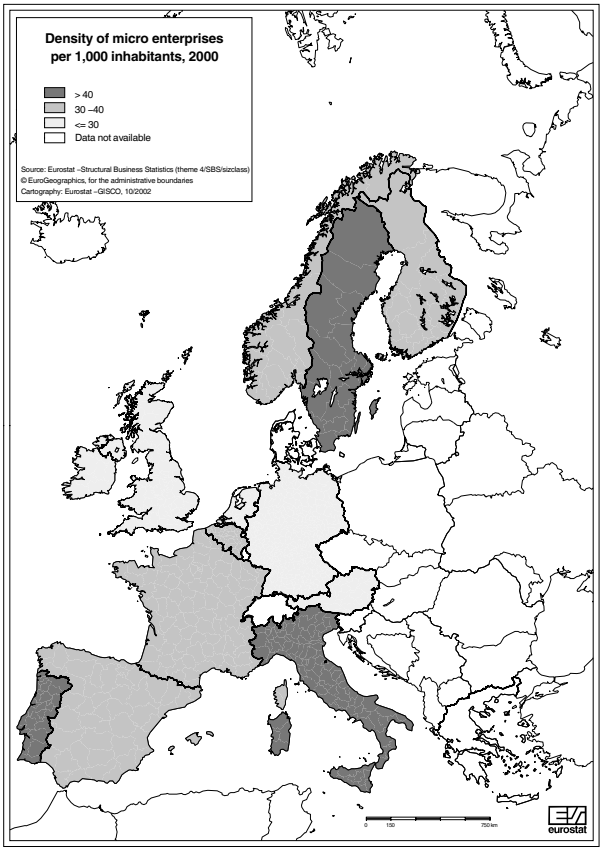
The highest concentration of small enterprises, again relative to the number of inhabitants, was found in Austria and Norway, with medium-sized enterprises also well represented in both of these countries, as well as Sweden and the United Kingdom - see maps 2.1.2 and 2.1.3. Large enterprises were most frequently found in northern Europe, in particular in the Nordic countries, Germany, Austria and the United Kingdom - see map 2.1.4.

Table 2.1.1: Business enterprise population - main indicators, 2000 (1)

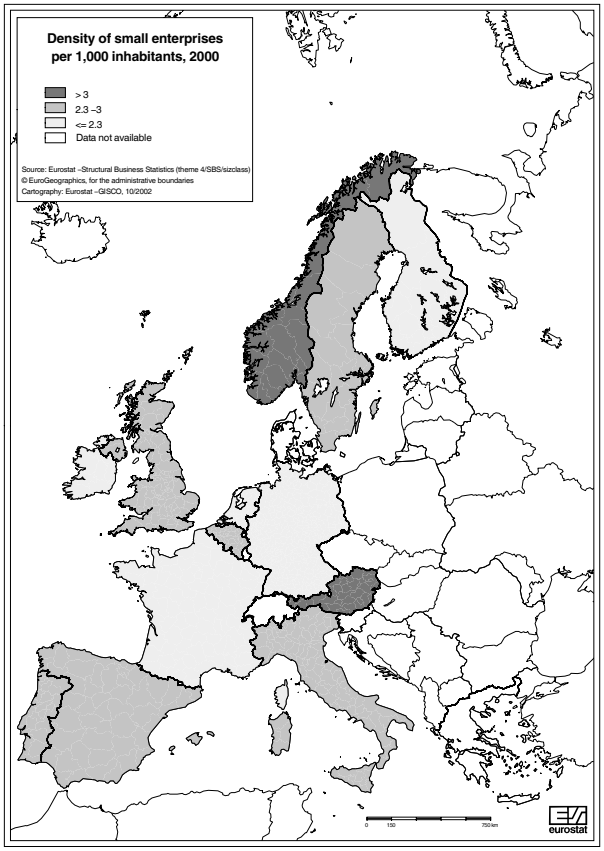
	B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK	NO
No. of enterprises (thousands)	372	47	1,168	:	1,595	1,976	:	3,620	:	414	193	515	183	418	1,480	160
No. of persons employed (thousands)	2,362	652	15,247	:	7,771	13,104	:	13,653	:	3,553	2,139	2,834	1,214	2,418	18,155	1,103
Turnover (billion EUR)	523	85	2,558	:	925	2,414	:	2,029	:	:	324	254	251	421	3,060	:
Value added (billion EUR)	113	31	485	:	214	586	:	499	:	:	99	55	66	117	918	:

(1) Activity coverage is NACE Sections C, D, E, F, G, H, I and K. B, DK, D, E, F, NL, A, P and NO, 1999. S, 1998. P, turnover, 1998. DK, NACE Sections D and F. D, NACE Sections D, F, G and H. E, NACE Sections D, G, H and K. NL, NACE Sections F, G, H, I and K. NO, NACE Sections D, G, H, I and K.
Source: Eurostat - Structural Business Statistics (theme 4/SBS/sizclass)

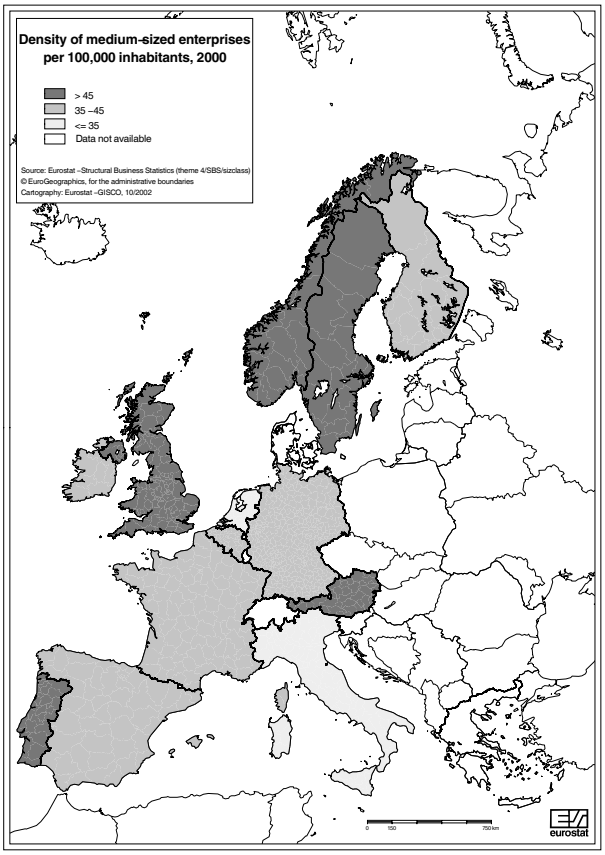
Map 2.1.1



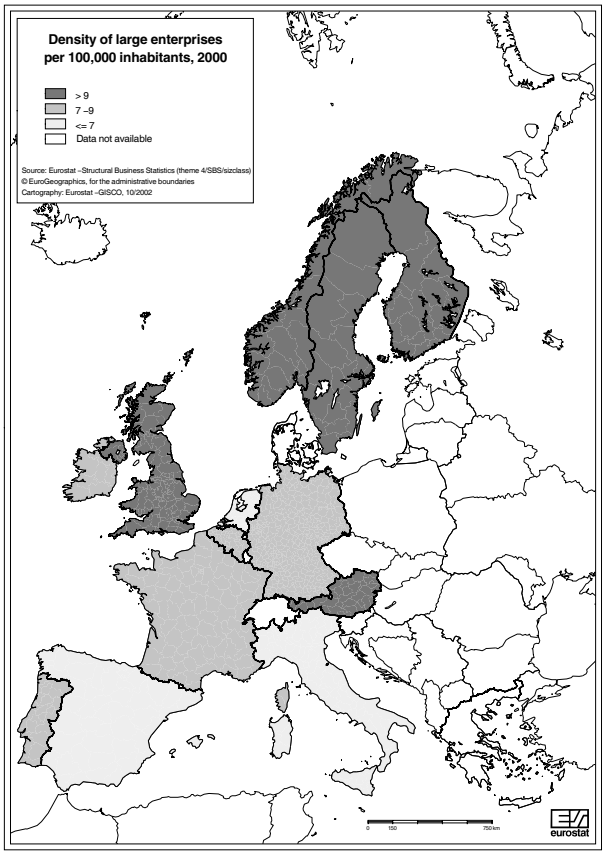
Map 2.1.2



Map 2.1.3



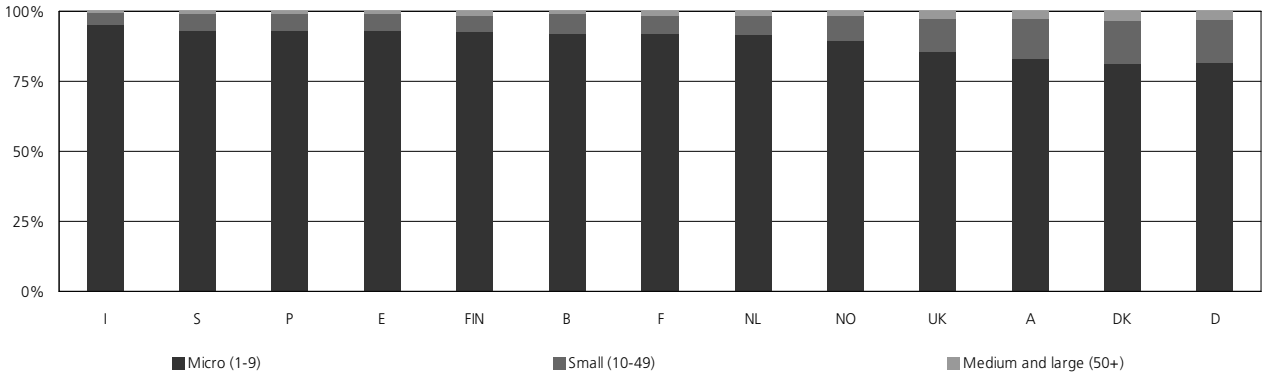
Map 2.1.4



Notes: Activity coverage is NACE Sections C, D, E, F, G, H, I and K. B, D, E, F, A, P and NO, 1999. D, NACE Sections C, D, F, G and H. E, NACE Sections C, D, E, G, H and K. NL, NACE Sections F, G, H, I and K. NO, NACE Sections D, G, H, I and K.
For map 2.1.2 - IRL, NACE Sections C, D, E, G, I and K. For map 2.1.3 - B, NACE Sections D, F, G, H, I and K; IRL, NACE Sections C, D, E, G, I and K; P, NACE Sections D, E, F, G, H, I and K. For map 2.1.4 - B, NACE Sections D, F, G, H, I and K; IRL, NACE Sections C, D, E, G, I and K; P, NACE Sections D, E, F, G, H, I and K.
Source: Eurostat - Structural Business Statistics (theme 4/SBS/sizclass)

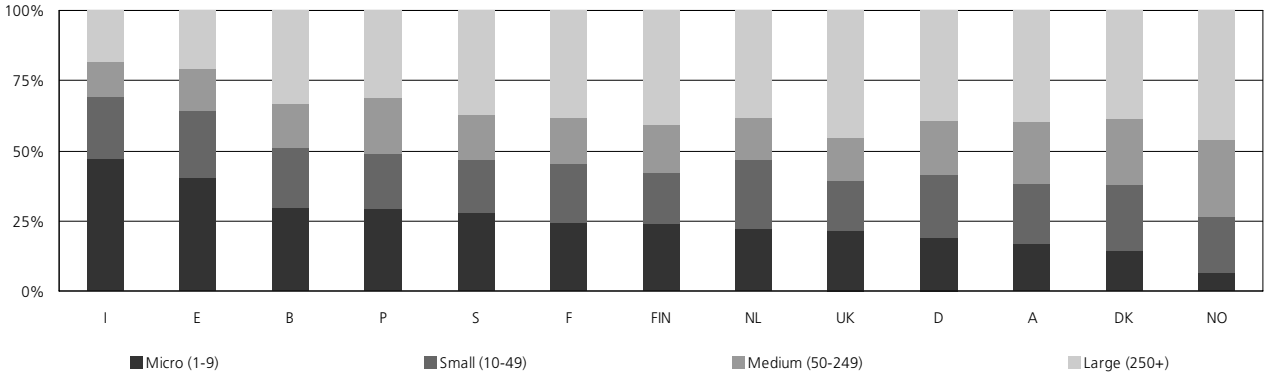
Figures 2.1.9 to 2.1.11 show the breakdown of the number of enterprises, employment and value added between each of the four size classes. They confirm the importance of micro enterprises in the southern Member States, with Italy, Portugal and Spain appearing among the first four countries in the ranking for each of the figures (which are ranked according to the importance of micro enterprises).

Figure 2.1.9: Breakdown of number of enterprises by enterprise size class, 2000 (%) (1)



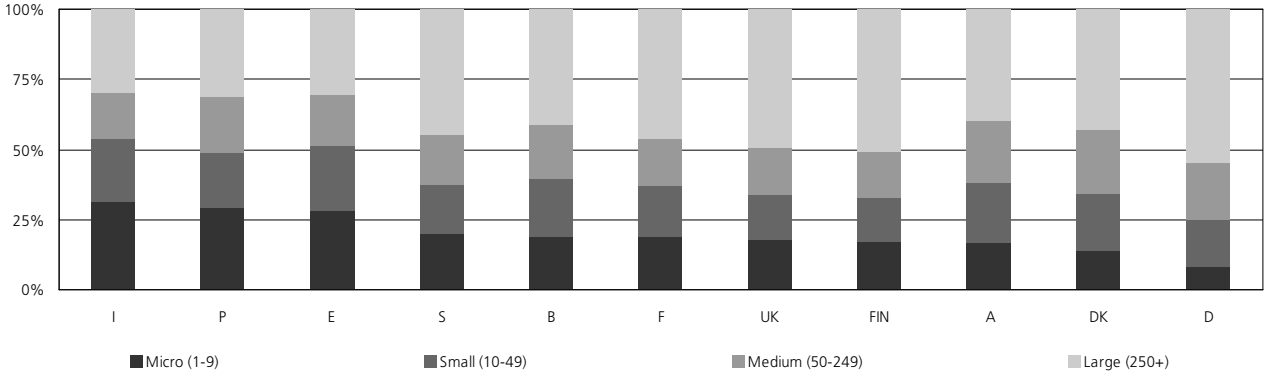
(1) Activity coverage is NACE Sections C, D, E, F, G, H, I and K. Figure is ranked on share of micro enterprises. EL, IRL and L, not available. B, DK, D, E, F, NL, A and P, 1999. S, 1998. B, NACE Sections C and E, not available. DK, NACE Sections G, H, I and K, not available. D, NACE Sections E, I and K, not available. E, NACE Sections F and I, not available. NL, NACE Sections C, D and E, not available. P and FIN, NACE Section C, not available. NO, NACE Sections C, E and F, not available.
Source: Eurostat - Structural Business Statistics (theme 4/SBS/sizclass)

Figure 2.1.10: Breakdown of number of persons employed by enterprise size class, 2000 (%) (1)



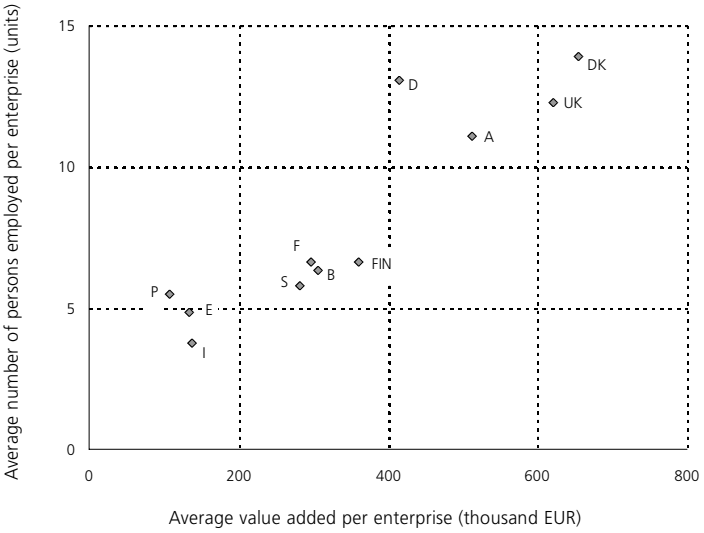
(1) Activity coverage is NACE Sections C, D, E, F, G, H, I and K. Figure is ranked on share of micro enterprises. EL, IRL and L, not available. B, DK, D, E, F, NL, A and P, 1999. S, 1998. B, NACE Sections C and E, not available. DK, NACE Sections G, H, I and K, not available. D, NACE Sections E, I and K, not available. E, NACE Sections F and I, not available. NL, NACE Sections C, D and E, not available. P and FIN, NACE Section C, not available. NO, NACE Sections C, E and F, not available.
Source: Eurostat - Structural Business Statistics (theme 4/SBS/sizclass)

Figure 2.1.11: Breakdown of value added by enterprise size class, 2000 (%) (1)



(1) Activity coverage is NACE Sections C, D, E, F, G, H, I and K. Figure is ranked on share of micro enterprises. EL, IRL, L, NL and NO, not available. B, DK, D, E, F, NL, A and P, 1999. S, 1998. B, NACE Sections C and E, not available. DK, NACE Sections G, H, I and K, not available. D, NACE Sections E, G, I and K, not available. E, NACE Sections F and I, not available. NL, NACE Sections C, D and E, not available. P and FIN, NACE Section C, not available. NO, NACE Sections C, E and F, not available.
Source: Eurostat - Structural Business Statistics (theme 4/SBS/sizclass)

Figure 2.1.12: Average size of enterprises, 2000 (1)



(1) Activity coverage is NACE Sections C, D, E, F, G, H, I and K. B, DK, D, E, F, A and P, 1999. S, 1998. DK, NACE Sections D and F. D, NACE Sections D, F, G and H. E, NACE Sections D, G, H and K.
Source: Eurostat - Structural Business Statistics (theme 4/SBS/sizclass)

Figure 2.1.12 displays the average size of enterprises in terms of the number of persons employed and value added per enterprise. Three distinct groups of countries can be seen, with those characterised by generally large enterprises in the top right corner and those characterised by very small enterprises in the bottom left corner.

SMES IN DIFFERENT ECONOMIC ACTIVITIES - SECTORAL PROFILE

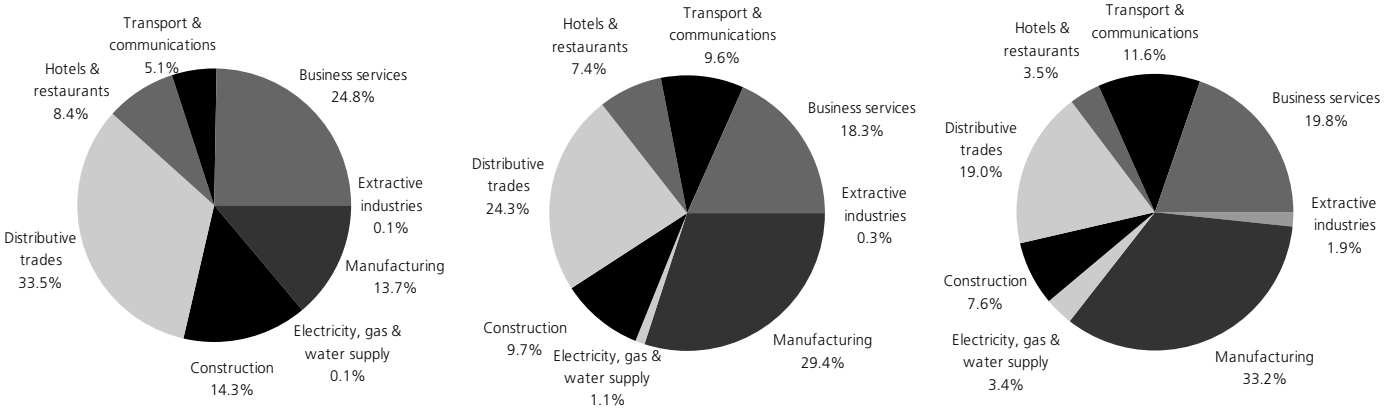
The structure and distribution of enterprises between different economic activities, following the NACE classification, also shows wide divergences. Certain activities are clearly more disposed to being dominated by SMEs, whilst others benefit from the application of scale economies and hence tend to favour larger enterprises. Table 2.1.2 shows the distribution of the number of enterprises across the EU. The service sector accounts for the majority of enterprises, with between 69% (Portugal and Finland) and 77% (Sweden) of the total number of enterprises in the nine Member States for which data are available. Within the service sector, distributive trades is usually the NACE Section accounting for the largest number of enterprises; although this observation did not hold in Sweden, the United Kingdom or Norway, where there were more business services' enterprises. Distribution accounted for 43.9% of the total number of enterprises in Portugal, a share that fell to as low as 26.8% in Finland. The importance of the distributive trades sector in the EU is shown in figure 2.1.13 (overleaf), which is based on data for Belgium, France, Italy, the Netherlands, Austria, Portugal, Finland, Sweden and the United Kingdom. One-third (33.5%) of all the enterprises in these countries were in the distributive trades sector, followed by business services with almost one-quarter (24.8%) of the total. As regards non-service sectors, there were slightly more enterprises in the construction sector (14.3%) than there were in manufacturing (13.7%); none of the remaining activities (at the NACE Section level) accounted for more than 10% of the total number of enterprises.

Table 2.1.2: Breakdown of number of enterprises by activity, 2000 (thousands) (1)

NACE label (code)	B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK	NO
TOTAL (C to I and K)	371.6	:	:	:	:	1,976.4	:	3,620.2	:	:	193.0	514.8	183.0	417.8	1,480.4	:
Extractive industries (C)	0.2	0.2	2.0	:	2.4	2.8	0.1	4.1	:	0.3	0.3	1.2	1.2	0.6	1.6	:
Manufacturing (D)	37.4	20.5	231.8	:	229.3	252.5	4.5	560.9	:	47.0	25.1	76.9	26.2	52.9	167.6	10.1
Food, beverages & tobacco (DA)	9.0	2.0	44.1	:	33.9	68.8	0.7	69.0	:	5.3	4.4	8.7	2.0	3.0	7.9	1.4
Textiles (DB)	3.0	1.2	11.5	:	27.7	18.7	0.3	78.2	:	3.3	1.8	14.4	2.4	3.4	12.1	0.4
Leather (DC)	0.2	0.1	1.3	:	7.5	2.5	0.0	23.9	:	0.5	0.2	3.5	0.3	0.4	1.0	0.0
Wood (DD)	1.7	0.8	15.8	:	18.5	10.7	0.2	50.0	:	2.2	3.0	8.7	3.0	6.1	8.5	0.9
Pulp, paper, publishing & printing (DE)	5.5	3.3	21.4	:	24.2	31.2	0.6	32.5	:	8.3	1.7	4.5	3.0	8.9	32.6	1.9
Coke, refined petroleum & nuclear fuel (DF)	0.0	0.0	0.1	:	0.0	0.1	0.0	0.5	:	0.0	0.0	0.0	0.0	0.0	0.2	0.0
Chemicals & man-made fibres (DG)	0.7	0.4	2.9	:	4.5	4.0	0.2	6.3	:	0.8	0.4	0.9	0.3	0.8	4.0	0.1
Rubber and plastics (DH)	1.0	0.7	7.0	:	6.1	5.1	0.3	13.6	:	1.3	0.6	1.0	0.7	1.5	7.1	0.3
Other non-metallic minerals (DI)	1.7	0.8	11.5	:	12.3	8.6	0.3	27.6	:	1.8	1.2	4.7	1.0	1.6	5.4	0.4
Basic metals & fabricated metal products (DJ)	6.0	4.1	46.9	:	39.8	30.4	0.6	99.8	:	7.3	3.4	14.6	4.6	10.4	32.1	1.3
Machinery & equipment n.e.c. (DK)	1.6	2.3	23.4	:	14.0	16.2	0.4	43.1	:	3.7	1.9	3.7	3.6	5.0	13.9	1.1
Electrical & optical equipment (DL)	2.0	2.0	25.2	:	10.0	19.9	0.5	55.1	:	3.5	1.8	2.1	1.7	4.4	16.4	0.7
Transport equipment (DM)	0.7	0.6	3.4	:	4.2	4.9	0.1	6.8	:	2.7	0.3	0.7	0.9	2.1	5.8	0.7
Manufacturing n.e.c. (DN)	4.3	2.2	17.5	:	26.8	31.3	0.4	54.4	:	6.2	4.5	9.3	2.8	5.4	20.6	0.8
Electricity, gas & water supply (E)	0.1	5.4	3.6	:	2.1	2.0	0.0	2.1	:	0.3	0.7	0.3	1.0	1.2	0.3	:
Construction (F)	53.3	26.4	274.3	:	:	308.5	0.5	511.0	:	62.3	17.5	78.4	29.2	50.8	190.8	:
Distributive trades (G)	144.0	:	471.7	:	774.9	621.7	:	1,321.6	:	163.9	60.4	225.8	49.0	119.4	405.0	57.5
Hotels & restaurants (H)	41.3	:	185.6	:	256.2	203.2	:	250.2	:	40.5	37.9	60.2	10.6	20.1	116.1	9.4
Transport & communications (I)	15.6	:	:	:	:	96.2	:	164.6	:	26.4	11.8	19.9	23.7	31.2	79.6	20.9
Business services (K)	79.8	:	:	:	406.9	489.6	:	805.7	:	121.3	39.3	51.5	42.3	151.3	519.4	62.2

(1) B, DK, F, IRL and NO, 1999. D, NACE Section E, 1998. D, NACE Sections F, G and H, 1999. E, NACE Sections G, H and K, 1999. NL, NACE Sections C, D and E, 1998. NL, NACE Sections F, G, H, I and K, 1999. A, total and NACE Sections F, G, H, I and K, 1999. P, total and NACE Sub-Sections CA and CB and Section G, 1999. S, NACE Sections F, H, I and K, 1999. S, total and NACE Section G, 1998.
Source: Eurostat - Structural Business Statistics (theme 4/SBS/sizclass)

Figure 2.1.13: Breakdown of main indicators in the EU by activity, 2000



Number of enterprises (1) **Number of persons employed (2)** **Value added (3)**

(1) Based on data from table 2.1.2, where only full country data sets existed (B, F, I, NL, A, P, FIN, S and UK); mixed years - see table 2.1.2 for details of reference period for each country. (2) Based on data for B, F, I, A, P, FIN, S and UK; mixed years - B, F, A and P, 1999; S, 1998. (3) Based on data for B, F, I, A, P, FIN, S and UK; mixed years - B, F, A and P, 1999; S, 1998.
Source: Eurostat - Structural Business Statistics (theme 4/SBS/sizclass)

As regards the contribution of different NACE Sections to employment, figure 2.1.13 shows that the largest employer was the manufacturing sector, where almost three out of ten persons were employed (29.4%), followed by distributive trades, with just under one-quarter (24.3%). Business services (18.3%) was the only other NACE Section to account for more than 10% of total employment.

There were further significant shifts in the composition of the business economy when studying the breakdown of value added - see figure 2.1.13. The manufacturing sector became even more important, accounting for one-third (33.2%) of total value added, followed by business services and distributive trades, both of which accounted for just under one-fifth of the total (19.8% and 19.0% respectively). The transport and communications sector accounted for 11.6% of total value added.

Table 2.1.3 shows the contribution of the four different enterprise size classes to employment and value added within each NACE Section of the business economy. There are considerable differences observed between activities; although not surprising, the most notable include the importance of large enterprises in extractive, manufacturing, electricity, gas and water supply and transport and communications sectors. This may be explained by scale economies affecting the minimum efficient scale of production in certain industrial activities or alternatively because some sectors are characterised by the establishment of a national network, often controlled by a sole monopoly provider (for example, electricity grids, rail networks or public water systems).

Table 2.1.3: Breakdown of employment and value added by activity, 2000 (1) (%)

	B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK	NO
Extractive industries (NACE Section C)																
Share of employment																
Micro (1-9)	12.6	19.8	3.8	:	13.1	11.4	2.1	27.4	:	:	13.1	21.2	33.1	13.4	4.9	:
Small (10-49)	35.5	22.4	11.5	:	28.8	30.7	11.2	43.5	:	:	32.4	42.0	15.7	11.8	9.0	:
Medium (50-249)	29.2	:	10.7	:	16.5	16.9	37.2	9.7	:	:	:	:	20.1	15.2	20.4	:
Large (250+)	:	:	74.0	:	41.6	41.0	49.5	18.4	:	:	:	:	39.2	61.4	65.7	:
Share of value added																
Micro (1-9)	14.1	89.2	7.2	:	11.4	6.6	2.0	8.5	:	:	10.0	20.7	30.9	9.8	5.7	:
Small (10-49)	26.0	6.3	7.7	:	32.4	38.5	8.1	15.9	:	:	21.7	38.2	11.2	10.9	3.7	:
Medium (50-249)	29.0	:	10.6	:	21.4	26.2	43.2	8.9	:	:	:	:	23.8	17.8	23.1	:
Large (250+)	:	:	74.4	:	34.8	28.7	46.7	56.0	:	:	:	:	42.7	58.7	67.5	:
Manufacturing (NACE Section D)																
Share of employment																
Micro (1-9)	11.7	7.8	7.2	:	20.6	12.4	3.4	25.1	:	:	9.9	19.1	8.8	11.1	10.1	8.5
Small (10-49)	19.9	19.2	14.5	:	32.1	19.6	18.7	31.3	:	:	19.1	27.6	15.1	15.2	18.1	21.3
Medium (50-249)	23.4	26.3	23.2	:	20.9	21.7	34.0	20.6	:	:	27.1	29.6	22.5	20.7	25.8	27.6
Large (250+)	45.0	46.6	55.0	:	26.4	46.2	43.9	23.0	:	:	44.0	23.7	53.6	52.9	46.0	42.6
Share of value added																
Micro (1-9)	6.0	7.5	3.3	:	10.5	8.5	1.1	13.8	:	9.1	5.7	9.4	5.0	6.1	8.2	7.1
Small (10-49)	14.5	17.0	10.6	:	23.5	15.4	8.7	27.7	:	16.3	13.8	20.4	9.5	11.9	13.8	17.3
Medium (50-249)	22.0	24.8	20.3	:	22.8	19.0	20.8	24.5	:	21.6	25.8	28.7	15.9	19.0	22.1	26.2
Large (250+)	57.4	50.8	65.8	:	43.2	57.1	69.4	34.0	:	52.9	54.6	41.6	69.6	63.0	55.9	49.4
Electricity, gas & water supply (NACE Section E)																
Share of employment																
Micro (1-9)	0.3	31.4	1.9	:	6.1	0.6	:	2.5	:	:	4.1	2.2	4.6	5.5	0.2	:
Small (10-49)	1.1	14.0	6.3	:	6.9	1.8	:	5.1	:	:	5.4	3.3	13.5	16.8	1.3	:
Medium (50-249)	4.6	23.1	16.0	:	11.0	3.3	:	9.0	:	:	:	19.6	27.9	28.8	2.9	:
Large (250+)	93.1	31.4	75.8	:	76.0	94.2	:	83.4	:	:	:	75.0	54.1	48.9	95.6	:
Share of value added																
Micro (1-9)	30.2	24.4	3.8	:	1.9	1.4	:	2.1	:	2.0	2.7	8.7	5.7	15.1	1.3	:
Small (10-49)	0.7	16.1	5.5	:	3.4	1.1	:	3.2	:	1.1	3.7	2.0	12.9	10.8	0.4	:
Medium (50-249)	11.2	24.0	14.6	:	6.6	2.3	:	6.4	:	6.0	:	9.1	31.9	26.3	2.9	:
Large (250+)	57.4	35.6	76.0	:	88.0	95.2	:	88.4	:	90.9	:	80.2	49.5	47.8	95.3	:
Construction (NACE Section F)																
Share of employment																
Micro (1-9)	43.1	30.7	31.4	:	:	44.8	:	65.8	:	20.4	18.6	47.7	36.2	39.8	38.1	:
Small (10-49)	31.2	36.5	39.0	:	:	30.7	:	24.7	:	37.4	40.3	27.4	29.2	24.2	21.2	:
Medium (50-249)	17.1	15.6	19.6	:	:	12.2	40.2	6.3	:	21.1	23.9	14.4	12.8	9.1	13.7	:
Large (250+)	8.5	17.2	10.0	:	:	12.3	:	3.3	:	21.2	17.2	10.4	21.8	26.9	27.0	:
Share of value added																
Micro (1-9)	32.4	31.7	24.6	:	:	38.6	:	55.7	:	:	16.9	33.7	35.1	29.7	32.8	:
Small (10-49)	33.5	33.1	40.2	:	:	31.6	:	29.5	:	:	35.8	27.2	27.3	22.7	22.8	:
Medium (50-249)	21.7	15.6	21.8	:	:	14.0	35.3	9.1	:	:	24.7	19.9	13.4	9.3	16.3	:
Large (250+)	12.4	19.5	13.4	:	:	15.8	:	5.6	:	:	22.6	19.2	24.2	38.3	28.0	:
Distributive trades (NACE Section G)																
Share of employment																
Micro (1-9)	46.6	:	25.7	:	56.4	35.1	:	70.4	:	28.5	27.4	60.2	30.9	38.7	23.9	34.6
Small (10-49)	25.2	:	25.1	:	21.9	25.1	:	15.7	:	26.4	23.4	21.2	22.5	24.2	16.4	32.6
Medium (50-249)	10.7	:	15.3	:	9.3	15.1	:	5.8	:	13.9	18.8	9.9	13.9	15.4	9.8	15.4
Large (250+)	17.6	:	33.9	:	12.4	24.7	:	8.1	:	31.1	30.4	8.6	32.7	21.7	49.9	17.5
Share of value added																
Micro (1-9)	31.9	:	:	:	44.0	30.7	:	54.3	:	:	23.0	37.1	27.1	27.6	20.6	:
Small (10-49)	29.7	:	:	:	26.8	26.1	:	23.1	:	:	25.1	27.0	23.8	27.7	18.2	:
Medium (50-249)	16.2	:	:	:	13.7	16.6	:	11.0	:	:	22.7	21.9	17.5	20.8	13.6	:
Large (250+)	22.3	:	:	:	15.5	26.6	:	11.5	:	:	29.1	14.0	31.6	24.0	47.6	:
Hotels & restaurants (NACE Section H)																
Share of employment																
Micro (1-9)	58.0	:	47.8	:	54.3	52.2	:	65.6	:	46.7	49.9	59.2	36.6	37.6	23.4	26.5
Small (10-49)	25.1	:	30.2	:	22.3	23.1	:	17.8	:	26.5	32.9	19.6	20.3	29.2	25.7	38.8
Medium (50-249)	7.3	:	10.6	:	12.6	7.3	:	6.0	:	8.6	12.2	10.0	14.2	13.3	9.6	23.9
Large (250+)	9.6	:	11.4	:	10.8	17.4	:	10.6	:	18.2	5.1	11.2	28.9	19.9	41.2	10.7
Share of value added																
Micro (1-9)	46.5	:	43.9	:	38.3	49.5	:	53.1	:	:	43.3	40.4	33.4	31.4	19.4	:
Small (10-49)	23.8	:	29.2	:	25.4	24.2	:	26.5	:	:	35.2	22.5	22.2	30.5	20.6	:
Medium (50-249)	10.1	:	11.5	:	20.2	7.9	:	8.3	:	:	14.7	18.8	15.0	15.3	10.8	:
Large (250+)	19.5	:	15.4	:	16.1	18.4	:	12.1	:	:	6.8	18.2	29.3	22.8	49.3	:
Transport & communications (NACE Section I)																
Share of employment																
Micro (1-9)	10.6	:	:	:	:	10.2	:	23.6	:	10.1	12.2	23.4	24.5	18.1	12.2	24.7
Small (10-49)	17.5	:	:	:	:	13.1	:	13.6	:	19.9	14.4	15.2	11.4	13.2	12.5	11.8
Medium (50-249)	11.5	:	:	:	:	12.9	:	11.5	:	15.4	11.3	12.8	13.0	9.7	10.0	12.3
Large (250+)	60.4	:	:	:	:	63.8	:	51.3	:	54.7	62.0	48.6	51.2	58.9	65.3	51.1
Share of value added																
Micro (1-9)	8.2	:	:	:	:	6.9	:	14.1	:	:	7.3	10.6	21.0	14.4	9.4	:
Small (10-49)	15.5	:	:	:	:	9.0	:	11.8	:	:	12.9	10.9	11.0	11.1	10.0	:
Medium (50-249)	10.6	:	:	:	:	9.7	:	10.1	:	:	9.8	8.3	11.6	9.8	9.8	:
Large (250+)	65.7	:	:	:	:	74.3	:	64.0	:	:	70.1	70.2	56.4	64.6	70.7	:
Business services (NACE Section K)																
Share of employment																
Micro (1-9)	30.5	:	:	:	40.2	20.7	:	60.4	:	15.7	34.9	36.9	29.5	42.7	28.0	34.0
Small (10-49)	13.8	:	:	:	15.9	17.9	:	13.4	:	18.1	24.3	15.5	19.5	18.6	17.9	19.9
Medium (50-249)	13.3	:	:	:	14.9	17.5	:	11.3	:	14.6	18.7	17.4	18.9	16.0	16.5	16.0
Large (250+)	42.4	:	:	:	29.0	44.0	:	14.9	:	51.5	22.1	30.2	32.1	22.7	37.5	30.0
Share of value added																
Micro (1-9)	30.9	:	:	:	50.0	23.3	:	56.3	:	:	35.4	40.7	35.2	36.0	29.4	:
Small (10-49)	22.2	:	:	:	18.9	19.1	:	16.3	:	:	28.5	21.5	24.0	19.8	19.4	:
Medium (50-249)	21.4	:	:	:	14.4	20.8	:	12.1	:	:	22.4	19.9	21.9	20.8	18.9	:
Large (250+)	25.4	:	:	:	16.7	36.8	:	15.3	:	:	13.7	17.9	18.9	23.3	32.3	:

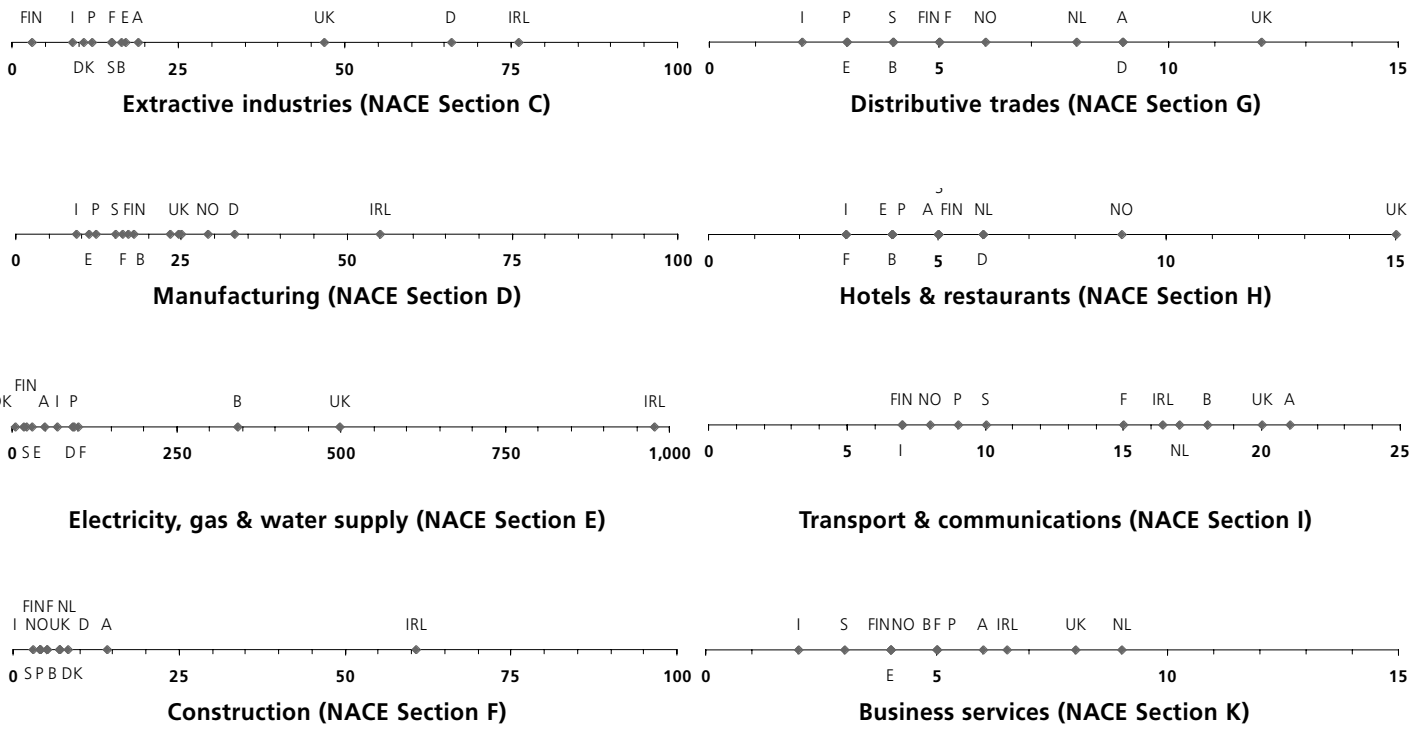
(1) B, DK, F, IRL, NO, 1999. S, 1998. D, NACE Section E, 1998; NACE Sections F, G and H, 1999. E, NACE Sections G, H and K, 1999. I, NACE Section C for medium and large enterprises, 1998. NL, NACE Sections F, G, H, I and K, 1999; NACE Sections D and E, 1998. A, NACE Sections F, G, H, I and K, 1999. P, NACE Section G, 1999; NACE Section C for value added, 1999. FIN, NACE Section C for small enterprises, 1999; NACE Section C for medium and large enterprises, 1998. S, NACE Section C for medium and large enterprises, 1999; NACE Sections F, H, I and K, 1999; NACE Section G, 1998.
Source: Eurostat - Structural Business Statistics (theme 4/SBS/sizclass)

These differences are apparent in figure 2.1.14 which plots (for each Member State) the average number of persons employed per enterprise for each NACE Section. Note that the scales on the axis of this figure are different between some of the activities.

This opening section has provided some basic facts and has shown that there are huge numbers of SMEs in the EU that together account for 99.7% of all enterprises. However, their economic weight, although still important, is not as large: for example, they provide work to two-thirds (66.2%) of the persons employed in the EU's business economy.

The data presented has also shown that there is a distinct divide in the structure of the European business community between the north and the south, with a predominance of smaller enterprises in the southern Member States. At the same time, there is also a clear pattern across economic sectors, with construction, distributive trades, hotels and restaurants and business services generally characterised by a higher proportion of SMEs. These activities often display a close proximity to the consumer and require relatively low levels of capital investment to start a business. On the other hand, enterprises operating in manufacturing or network industries often require a great deal of investment to operate at a minimum efficient scale or run national/international infrastructures, and hence these activities tend to be dominated by larger enterprises.

Figure 2.1.14: Average number of persons employed per enterprise, 2000 (1)



(1) EL and L, not available. B, DK, F and NL, 1999. IRL, NACE Sections C to F, 1999; NACE Sections I and K, 1997. A, NACE Sections F to I and K, 1999. P, NACE Section G, 1999. S, NACE Sections H, I and K, 1999; NACE Sections F and G, 1998. NO, NACE Sections D, G to I and K, 1999; NACE Section F, 1997.
Source: Eurostat - Structural Business Statistics (theme 4/SBS/sizclass)

2.2: SMEs AND COMPETITIVENESS

Productivity gains are often attributed to the introduction of new technology and the process of capital deepening (an increase in the use of capital compared to labour as an input). These trends have been encouraged as an increased number of alternatives for obtaining capital have become available to enterprises (for example, IPOs - Initial Public Offerings of company shares on the stock market - and venture capital). This section examines the divergence between the use of capital and labour inputs in enterprises of different size classes and the effects this may have on competitiveness and profitability.

STRUCTURE AND PERFORMANCE INDICATORS

Changes in enterprise cost structures may well reflect new patterns of industrial organisation; whereby outsourcing, sub-contracting and just-in-time production have allowed large enterprises to reduce the burdens associated with tangible fixed assets and the maintenance of stocks. One result of this trend has been an increase in the relative importance of purchases of goods and services compared to personnel costs. This shift in industrial organisation has resulted in a reduction of the productive capacity of many large enterprises, as enterprises focus and specialise in areas that generate high added value.

At a sectoral level, apparent labour productivity, or value added per person employed can be used as an indicator for an industry's or a country's competitiveness - although there are many other factors involved (as will be shown in some of the following sections of this publication). It is likely that large enterprises will report higher apparent labour productivity than SMEs within the same activity/country due to the changes in industrial organisation outlined above. This is the case, for example, in the manufacturing sector, where large enterprises registered the highest apparent labour productivity in every one of the Member States. On the other hand, in other sectors (for example, distribution or business services), smaller and medium-sized enterprises often report apparent labour productivity that is equal to or higher than that recorded by large enterprises - see table 2.2.1 (overleaf).

Table 2.2.1: Apparent labour productivity broken down by size class, 2000 (thousand EUR per person employed) (1)

	B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK	NO
Extractive industries (NACE Section C)																
Micro (1-9)	91.1	3,250.9	126.7	:	36.5	26.4	64.1	39.1	:	:	75.1	25.9	54.1	51.3	602.1	:
Small (10-49)	59.5	200.9	44.8	:	47.4	57.1	47.9	46.3	:	:	65.6	24.0	42.3	65.1	212.6	:
Medium (50-249)	81.4	:	66.3	:	54.7	70.7	77.3	80.9	:	:	:	:	70.6	69.0	581.9	:
Large (250+)	:	:	67.2	:	35.1	31.9	62.8	268.9	:	:	:	:	65.0	56.5	528.0	:
Manufacturing (NACE Section D)																
Micro (1-9)	31.4	46.9	24.6	:	19.7	34.3	34.3	23.3	:	:	32.8	9.5	40.5	33.5	48.5	46.0
Small (10-49)	44.8	43.5	39.1	:	28.3	39.6	51.2	37.5	:	:	41.0	14.2	44.3	48.1	45.3	44.7
Medium (50-249)	57.9	46.3	47.1	:	42.3	44.0	67.1	50.2	:	:	53.9	18.7	49.9	56.4	50.8	52.2
Large (250+)	78.5	53.7	64.2	:	63.3	62.3	173.6	62.7	:	:	70.3	33.9	91.6	73.4	72.2	63.6
Electricity, gas & water supply (NACE Section E)																
Micro (1-9)	24,215.7	97.2	220.9	:	53.9	238.9	:	116.2	:	:	89.6	403.8	146.6	556.0	1,121.5	:
Small (10-49)	125.2	143.5	99.0	:	85.1	66.2	:	88.0	:	:	91.0	62.8	112.9	129.6	50.7	:
Medium (50-249)	:	129.9	102.3	:	103.4	76.0	:	98.8	:	:	:	47.0	135.0	183.2	152.9	:
Large (250+)	:	142.3	112.6	:	198.4	111.5	:	147.9	:	:	:	108.5	108.1	196.3	151.6	:
Construction (NACE Section F)																
Micro (1-9)	25.4	42.5	:	:	:	27.1	:	22.8	:	:	37.6	11.5	40.7	32.4	42.7	:
Small (10-49)	36.3	37.3	:	:	:	32.4	:	32.2	:	:	36.8	16.1	39.3	40.6	53.2	:
Medium (50-249)	42.8	41.2	40.1	:	:	36.1	57.3	39.1	:	:	42.8	22.4	43.9	44.1	59.3	:
Large (250+)	48.9	46.5	47.6	:	:	40.4	73.1	46.0	:	:	54.5	30.0	46.6	61.8	51.4	:
Distributive trades (NACE Section G)																
Micro (1-9)	27.2	:	:	:	17.6	34.1	:	21.4	:	:	31.5	9.8	38.7	13.0	31.5	:
Small (10-49)	46.9	:	:	:	27.7	40.6	:	41.0	:	:	40.2	20.4	46.7	18.2	40.7	:
Medium (50-249)	60.4	:	:	:	33.3	42.9	:	52.7	:	:	45.3	35.3	55.5	19.9	51.0	:
Large (250+)	50.3	:	:	:	28.3	42.0	:	39.6	:	:	35.8	25.9	42.7	26.9	34.9	:
Hotels & restaurants (NACE Section H)																
Micro (1-9)	14.3	:	16.8	:	10.4	26.5	:	17.2	:	:	19.2	7.1	24.9	21.9	16.0	:
Small (10-49)	16.9	:	28.1	:	16.8	29.2	:	31.7	:	:	23.6	11.9	29.9	27.3	15.4	20.1
Medium (50-249)	24.8	:	25.0	:	23.6	30.2	:	29.2	:	:	26.7	19.5	28.7	29.9	21.5	25.6
Large (250+)	36.3	:	6.9	:	21.9	29.7	:	24.1	:	:	29.7	17.0	27.7	29.9	23.0	:
Transport & communications (NACE Section I)																
Micro (1-9)	42.5	:	:	:	:	33.6	:	28.1	:	:	29.4	17.0	41.9	37.8	50.2	:
Small (10-49)	48.7	:	:	:	:	34.1	:	40.8	:	:	43.9	26.9	47.1	39.9	52.3	:
Medium (50-249)	50.6	:	:	:	:	37.5	:	41.7	:	:	42.5	24.4	43.6	48.0	63.4	:
Large (250+)	59.8	:	:	:	:	57.7	:	58.8	:	:	55.6	54.3	53.7	52.0	70.4	:
Business services (NACE Section K)																
Micro (1-9)	42.6	:	:	:	35.5	52.6	:	32.1	:	:	53.6	25.4	52.2	47.4	57.6	:
Small (10-49)	67.7	:	:	:	34.1	49.7	:	41.5	:	:	61.8	32.1	53.7	60.0	59.6	:
Medium (50-249)	67.5	:	:	:	27.8	55.6	:	37.0	:	:	63.2	26.3	50.5	72.8	62.8	:
Large (250+)	25.2	:	:	:	16.5	38.9	:	35.3	:	:	32.8	13.7	25.7	57.7	47.4	:

(1) DK, F, and NO, 1999. B, NACE Section C for medium-sized enterprises, 1998; otherwise 1999. D, NACE Section H, 1999; NACE Sections E and F, 1998. E, NACE Section G, H and K, 1999. IRL, 1999, except large enterprises for NACE Section F, 1998. I, medium-sized and large enterprises for NACE Section C, 1998. A, NACE Sections C, D and E, 1999. P, NACE Section C and G, 1999. FIN, small, medium-sized and large enterprises for NACE Section C, 1998. S, NACE Sections F, H, I and K, 1999; medium-sized and large enterprises for NACE Section C, 1999; NACE Section G, 1998.
Source: Eurostat - Structural Business Statistics (theme 4/SBS/sizclass)

Data on average personnel costs are only available for industrial activities (NACE Sections C to F). The data shows that personnel costs per employee tend to increase with the average size of an enterprise, such that large enterprises pay more for their employees (note that wage and social security are included in personnel costs). This relationship between the size of the enterprise and average personnel costs holds for practically all pairings of NACE and countries - see table 2.2.2[7].

Combining the two indicators of apparent labour productivity and average personnel costs per employee (see table 2.2.3), the resultant ratio is wage adjusted labour productivity - shown in table 2.2.4. The wage adjusted labour productivity ratio provides a more comparable measure of labour productivity, as it takes account of the differences in the level of average personnel costs, as well as reflecting the structure of employment by adjusting according to the share of employees in persons employed. This adjustment is particularly important for service sectors, as the number of self-employed and family workers is often high. Table 2.2.4 shows that even when the relatively high average personnel costs paid by large enterprises are taken into account, large enterprises tend to remain more productive. This relationship holds for all countries except Germany, where the wage adjusted labour productivity ratio (131.2%) for large enterprises in the manufacturing sector was at a similar level to the average for all enterprises (131.5%). In Ireland and Finland the wage adjusted labour productivity ratio for large enterprises in the manufacturing sector was considerably higher than the average for enterprises of all size classes (38.4% and 25.8% above the average, respectively). There were two countries where the wage adjusted labour productivity ratio of micro enterprises was above the average for all enterprises: the United Kingdom (9.1% higher) and Norway (11.2% higher).

Another way of studying the relationship between labour and other inputs is to calculate a ratio of personnel costs relative to total purchases of goods and services - see table 2.2.5. In the manufacturing sector this ratio averages around 25% in the EU, in other words for each euro that is spent directly on the workforce, four are spent on purchases of goods and services. This ratio does however vary considerably between economic activities as a function of the labour intensity of each sector. However, at the aggregated level of total manufacturing, large enterprises generally reported the lowest ratios.

(7) For readers who wish to obtain more information on the structure of labour costs, a new release of the Labour Cost Survey will be published shortly, with Statistics in Focus and Detailed Tables publications foreseen.

Table 2.2.2: Average personnel costs in industrial activities, broken down by size class, 2000 (thousand EUR per employee) (1)

	B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK	NO
Extractive industries (NACE Section C)																
Micro (1-9)	32.1	39.0	24.0	:	19.1	29.8	21.7	22.0	:	:	41.4	9.6	27.1	32.0	29.4	:
Small (10-49)	32.7	47.3	32.3	:	22.8	33.0	25.8	26.7	:	:	38.0	12.9	27.1	36.0	41.3	:
Medium (50-249)	39.1	:	40.3	:	31.0	36.5	34.7	35.0	:	:	:	:	33.5	37.5	58.5	:
Large (250+)	:	:	54.1	:	35.2	43.9	44.3	53.0	:	:	:	:	34.5	45.2	61.8	:
Manufacturing (NACE Section D)																
Micro (1-9)	23.2	33.0	22.7	:	16.5	27.3	18.5	18.9	:	:	23.3	8.4	29.3	31.7	27.3	:
Small (10-49)	31.1	32.2	27.5	:	19.1	30.4	21.8	23.4	:	:	29.1	9.6	30.5	36.6	29.7	:
Medium (50-249)	39.0	34.1	35.5	:	25.1	32.6	27.0	30.9	:	:	37.7	11.9	33.4	40.4	34.2	:
Large (250+)	49.7	35.6	48.9	:	35.5	42.8	32.0	37.9	:	:	44.4	16.6	38.9	45.5	41.9	:
Electricity, gas & water supply (NACE Section E)																
Micro (1-9)	121.1	38.0	28.5	:	23.2	30.3	:	28.8	:	:	28.7	19.3	34.2	40.8	84.5	:
Small (10-49)	41.5	47.1	33.8	:	30.9	39.6	:	32.8	:	:	42.3	21.0	38.2	46.0	40.7	:
Medium (50-249)	61.4	45.7	40.2	:	35.3	38.9	:	38.9	:	:	:	16.6	38.1	47.6	55.6	:
Large (250+)	80.9	45.3	57.2	:	45.9	55.1	:	44.8	:	:	:	30.7	39.3	54.1	48.3	:
Construction (NACE Section F)																
Micro (1-9)	25.1	31.9	29.5	:	:	25.5	:	19.4	:	:	31.8	9.4	28.8	29.0	21.8	:
Small (10-49)	30.2	30.0	30.3	:	:	28.3	:	23.1	:	:	29.2	10.1	29.6	34.2	30.5	:
Medium (50-249)	35.8	35.1	33.9	:	:	33.1	33.0	30.2	:	:	35.8	14.7	33.8	37.6	35.0	:
Large (250+)	41.2	40.8	42.3	:	:	39.4	36.0	37.9	:	:	46.5	21.0	35.7	38.9	37.1	:

(1) DK, F, and NO, 1999. B, NACE Section C for medium-sized enterprises, 1998; NACE Section E for medium-sized and large enterprises, 1998; otherwise 1999. D, NACE Sections F, 1999; NACE Section E, 1998. IRL, 1999, except large enterprises for NACE Section F, 1998. I, medium-sized and large enterprises for NACE Section C, 1998. A, NACE Section F, 1999. FIN, small enterprises for NACE Section C, 1999; medium-sized and large enterprises for NACE Section C, 1998. S, NACE Sections F, 1999; medium-sized and large enterprises for NACE Section C, 1999.
Source: Eurostat - Structural Business Statistics (theme 4/SBS/sizclass)

Table 2.2.3: Apparent labour productivity and average personnel costs in the manufacturing sector, broken down by size class, 2000 (thousand EUR) (1)

	B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK	NO
Apparent labour productivity																
Total	61.5	49.2	53.7	:	38.7	50.4	109.8	42.3	:	:	56.6	19.3	70.6	61.6	59.4	55.0
Micro (1-9)	31.4	46.9	24.6	:	19.7	34.3	34.3	23.3	:	:	32.8	9.5	40.5	33.5	48.5	46.0
Small (10-49)	44.8	43.5	39.1	:	28.3	39.6	51.2	37.5	:	:	41.0	14.2	44.3	48.1	45.3	44.7
Medium (50-249)	57.9	46.3	47.1	:	42.3	44.0	67.1	50.2	:	:	53.9	18.7	49.9	56.4	50.8	52.2
Large (250+)	78.5	53.7	64.2	:	63.3	62.3	173.6	62.7	:	:	70.3	33.9	91.6	73.4	72.2	63.6
Average personnel costs																
Total	41.4	34.4	40.8	:	24.6	36.4	28.0	28.6	:	:	38.0	11.9	35.6	41.9	36.5	40.1
Micro (1-9)	23.2	33.0	22.7	:	16.5	27.3	18.5	18.9	:	:	23.3	8.4	29.3	31.7	27.3	30.1
Small (10-49)	31.1	32.2	27.5	:	19.1	30.4	21.8	23.4	:	:	29.1	9.6	30.5	36.6	29.7	34.5
Medium (50-249)	39.0	34.1	35.5	:	25.1	32.6	27.0	30.9	:	:	37.7	11.9	33.4	40.4	34.2	38.4
Large (250+)	49.7	35.6	48.9	:	35.5	42.8	32.0	37.9	:	:	44.4	16.6	38.9	45.5	41.9	45.8

(1) Activity coverage is NACE Section D; B, DK, F, IRL and NO, 1999.
Source: Eurostat - Structural Business Statistics (theme 4/SBS/sizclass)

Table 2.2.4: Wage adjusted labour productivity in the manufacturing sector, broken down by size class, 2000 (%) (1)

	B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK	NO
Total	148.3	143.3	131.5	:	157.4	138.3	392.1	148.0	:	:	148.7	162.3	197.9	146.9	162.8	137.2
Micro (1-9)	135.4	142.4	108.7	:	119.6	125.9	185.0	123.5	:	:	140.5	113.3	138.4	105.8	177.6	152.6
Small (10-49)	144.3	135.1	142.2	:	148.4	130.4	234.6	159.9	:	:	140.7	147.9	145.0	131.6	152.7	129.7
Medium (50-249)	148.5	136.0	132.5	:	168.6	135.0	248.3	162.3	:	:	142.9	157.0	149.5	139.6	148.5	135.8
Large (250+)	157.9	150.8	131.2	:	178.5	145.6	542.5	165.4	:	:	158.3	204.1	235.4	161.1	172.1	139.0

(1) Wage adjusted labour productivity is defined as (value added/personnel costs)*(number of employees/number of persons employed); activity coverage is NACE Section D; B, DK, F, IRL and NO, 1999.
Source: Eurostat - Structural Business Statistics (theme 4/SBS/sizclass)

Table 2.2.5: Ratio of personnel costs relative to total purchases of goods and services in the manufacturing sector, broken down by size class, 2000 (%) (1)

	B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK	NO
Total	21.5	36.6	31.0	:	19.9	21.6	13.3	18.6	:	:	31.8	20.5	20.1	24.9	28.9	30.2
Micro (1-9)	13.3	30.4	60.9	:	27.2	12.9	28.6	16.4	:	:	38.9	26.4	34.5	31.0	36.0	30.2
Small (10-49)	23.7	45.5	43.5	:	27.0	31.2	26.2	22.0	:	:	45.6	26.4	35.0	38.3	42.8	33.4
Medium (50-249)	23.6	41.1	35.9	:	21.6	26.5	18.3	20.6	:	:	32.9	22.9	28.3	31.6	34.4	28.9
Large (250+)	21.1	33.0	27.8	:	15.6	20.3	9.9	16.2	:	:	28.5	15.7	16.3	21.2	24.4	29.8

(1) Activity coverage is NACE Section D; B, DK, F, IRL and NO, 1999.
Source: Eurostat - Structural Business Statistics (theme 4/SBS/sizclass)

FINANCIAL RATIOS

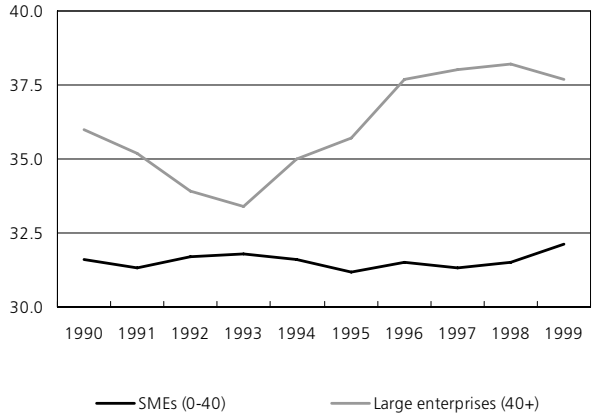
Large enterprises have tended to reduce their indebtedness and benefited from financial widening, through access to alternative sources of finance, such as IPOs. On the other hand, SMEs have traditionally faced a range of problems associated with financing, among which: the lack of a well-developed venture capital market in the EU; a risk averse investment sector that is not willing to support business plans; and cash flow unpredictability.

A large number of SMEs in Europe are founded as family enterprises and these are often unwilling to consider raising finance through stock markets, as this could lead to a considerable loss of independence. Alternatively, SMEs that do choose to raise capital may also face difficulties, as the recent volatility in stock markets shows. There is also a cultural difference between many Member States in the EU and USA with stock markets more developed in the USA, whilst the introduction of new markets in the EU have suffered particularly badly in the recent economic downturn. Furthermore, bank charges and lending conditions are often less favourable for SMEs than they are for large enterprises.

Data provided by the BACH database suggest that the financial profitability of SMEs was similar to that of large enterprises in the manufacturing sector during the 1990s, but was less volatile - see figure 2.2.1. Large enterprises saw their profitability decline at a rapid pace during the economic slowdown of 1992 and 1993; however, SMEs appeared to be partially cushioned from its effects. When the economy expanded again at a rapid pace from the mid-1990s onwards, the financial profitability of large enterprises recovered quickly to reach a similar level to that recorded by SMEs.

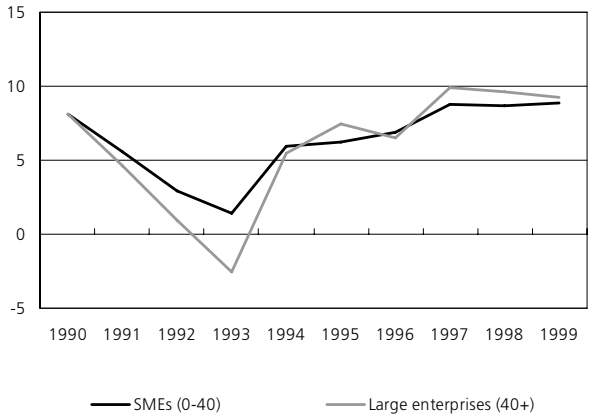
As financial markets became increasingly important from the mid-1990s onwards, the equity ratio of large enterprises grew at a rapid pace - see figure 2.2.2, at the same time lowering their level of indebtedness - see figure 2.2.3. On the other hand, smaller enterprises faced considerably higher indebtedness, while their own funds ratios remained fairly stable, even during the rapid expansion of economic activity. Tables 2.2.6 and 2.2.7 provide individual country information on equity ratios and indebtedness, broken down by activity, while table 2.2.8 (overleaf) presents gross operating rates across a range of industrial activities.

Figure 2.2.2: Own funds ratios in the EU in the manufacturing sector (NACE Section D) (%) (1)



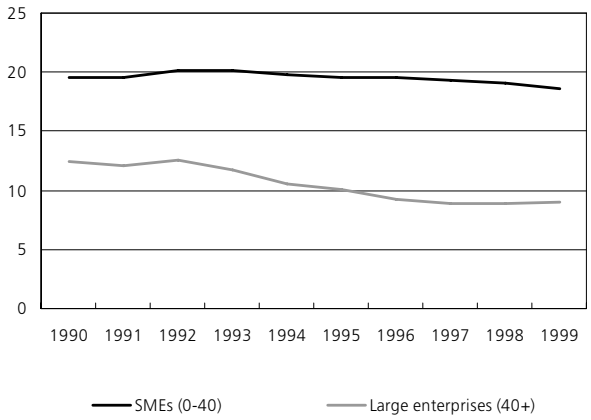
(1) EUR-11; size classes are defined in terms of turnover thresholds in millions of euro.
Source: European Commission - Directorate-General Economic and Financial Affairs, BACH database

Figure 2.2.1: Financial profitability in the EU in the manufacturing sector (NACE Section D) (%) (1)



(1) EUR-11; size classes are defined in terms of turnover thresholds in millions of euro.
Source: European Commission - Directorate-General Economic and Financial Affairs, BACH database

Figure 2.2.3: Indebtedness in the EU in the manufacturing sector (NACE Section D) (%) (1)



(1) EUR-11; indebtedness defined as amounts owed to credit institutions - long term debt; size classes are defined in terms of turnover thresholds in millions of euro.
Source: European Commission - Directorate-General Economic and Financial Affairs, BACH database

Table 2.2.6: Equity ratios, 2000 (%) (1)

	B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK
Energy & water (NACE Sections C and E)															
Small (0-7)	83.7	:	:	:	35.7	24.7	:	36.4	:	18.0	16.9	26.7	58.0	:	:
Medium (7-40)	39.5	:	:	:	50.3	35.4	:	46.3	:	66.4	:	39.0	52.6	:	:
Large (40+)	55.0	:	:	:	40.3	24.8	:	53.9	:	38.8	:	36.9	45.9	:	:
Average	56.8	:	:	:	40.5	24.9	:	53.4	:	39.3	32.1	36.8	47.1	:	:
Manufacturing industry (NACE Section D)															
Small (0-7)	38.4	:	:	:	42.7	37.0	:	28.9	:	33.3	15.9	34.6	38.8	:	:
Medium (7-40)	36.4	:	:	:	45.3	36.9	:	26.9	:	42.0	27.4	38.9	43.6	:	:
Large (40+)	37.7	:	:	:	42.7	36.0	:	32.4	:	54.3	44.8	47.2	41.9	:	:
Average	37.6	:	32.1	:	43.0	36.2	:	30.4	:	53.5	33.9	42.3	41.9	:	:
Construction (NACE Section F)															
Small (0-7)	32.6	:	:	:	26.0	25.7	:	8.9	:	33.3	8.1	18.9	33.7	:	:
Medium (7-40)	23.3	:	:	:	26.7	17.1	:	17.7	:	43.3	18.8	24.1	36.5	:	:
Large (40+)	16.0	:	:	:	37.8	14.4	:	16.2	:	28.7	27.9	32.8	25.1	:	:
Average	26.1	:	:	:	36.6	18.8	:	14.8	:	30.0	11.4	27.2	30.7	:	:
Distribution (NACE Section G)															
Small (0-7)	27.3	:	:	:	39.3	33.9	:	22.7	:	32.5	8.7	31.2	36.4	:	:
Medium (7-40)	26.1	:	:	:	40.4	31.9	:	19.1	:	45.8	23.7	31.8	43.9	:	:
Large (40+)	33.1	:	:	:	38.4	26.7	:	21.2	:	34.1	26.9	27.3	37.1	:	:
Average	30.0	:	:	:	38.7	28.3	:	20.6	:	34.5	16.9	29.2	38.2	:	:
Transport, storage & communication (NACE Section I)															
Small (0-7)	32.8	:	:	:	44.7	29.4	:	31.1	:	28.6	11.4	19.1	31.5	:	:
Medium (7-40)	34.6	:	:	:	68.0	24.2	:	25.7	:	32.4	35.7	27.9	40.2	:	:
Large (40+)	29.0	:	:	:	39.9	14.9	:	39.9	:	32.3		27.6	33.6	:	:
Average	30.2	:	:	:	41.1	15.5	:	38.8	:	32.2	14.0	27.3	34.4	:	:
Other services n.e.s. (NACE Sections H, J and K)															
Small (0-7)	56.2	:	:	:	43.6	60.3	:	28.2	:	37.7	27.6	64.8	46.2	:	:
Medium (7-40)	49.3	:	:	:	54.0	49.6	:	24.2	:	29.0	58.6	49.7	42.1	:	:
Large (40+)	45.1	:	:	:	37.6	24.1	:	25.8	:	36.5	23.4	-2.8	56.4	:	:
Average	53.8	:	:	:	38.7	38.7	:	25.5	:	36.5	34.9	56.4	49.1	:	:
Industry & services (excluding public administration) (NACE Sections C to K)															
Small (0-7)	51.7	:	:	:	40.8	39.1	:	23.6	:	33.8	14.3	56.2	38.5	:	:
Medium (7-40)	41.3	:	:	:	48.4	35.2	:	24.6	:	42.0	:	40.6	43.8	:	:
Large (40+)	38.8	:	:	:	39.6	29.0	:	34.5	:	43.5	:	33.0	41.0	:	:
Average	45.5	:	:	:	40.1	30.6	:	31.3	:	42.8	26.3	42.5	41.1	:	:

(1) Equity ratio defined as share capital and reserves relative to total assets; size classes are defined in terms of turnover thresholds in millions of euro.
Source: European Commission - Directorate-General Economic and Financial Affairs, BACH database

Table 2.2.7: Indebtedness in industry and services (excluding public administration), 2000 (%) (1)

	B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK
Energy & water (NACE Sections C and E)															
Small (0-7)	5.8	:	:	:	37.1	8.8	:	10.2	:	:	:	18.3	11.6	:	:
Medium (7-40)	1.3	:	:	:	7.9	7.1	:	5.2	:	13.7	:	13.0	7.1	:	:
Large (40+)	3.3	:	:	:	8.3	1.2	:	4.7	:	12.3	:	19.2	6.9	:	:
Average	3.4	:	:	:	8.4	1.4	:	4.8	:	:	:	18.4	7.1	:	:
Manufacturing industry (NACE Section D)															
Small (0-7)	11.9	:	:	:	9.1	9.2	:	6.8	:	:	:	8.5	15.5	:	:
Medium (7-40)	7.8	:	:	:	7.0	7.7	:	6.5	:	7.2	13.8	10.4	9.5	:	:
Large (40+)	4.7	:	:	:	4.9	3.4	:	6.4	:	2.7	7.6	8.1	7.9	:	:
Average	6.0	:	2.4	:	5.3	4.3	:	6.5	:	:	:	8.9	8.6	:	:
Construction (NACE Section F)															
Small (0-7)	11.9	:	:	:	11.4	4.2	:	27.6	:	:	:	18.8	13.6	:	:
Medium (7-40)	5.2	:	:	:	10.9	2.7	:	7.8	:	10.5	6.0	8.3	10.4	:	:
Large (40+)	3.7	:	:	:	3.7	0.9	:	5.1	:	2.8	10.3	7.8	5.1	:	:
Average	8.2	:	:	:	4.6	2.6	:	11.7	:	:	:	10.8	9.4	:	:
Distribution (NACE Section G)															
Small (0-7)	12.9	:	:	:	13.3	6.7	:	7.5	:	:	:	6.6	14.3	:	:
Medium (7-40)	6.7	:	:	:	9.3	6.1	:	4.9	:	9.0	9.8	5.7	5.6	:	:
Large (40+)	2.1	:	:	:	3.2	3.9	:	3.4	:	4.4	5.0	8.3	3.3	:	:
Average	6.5	:	:	:	4.2	4.6	:	4.1	:	:	:	7.3	6.1	:	:
Transport, storage & communication (NACE Section I)															
Small (0-7)	15.1	:	:	:	12.3	13.7	:	15.3	:	:	:	10.5	20.0	:	:
Medium (7-40)	11.2	:	:	:	9.6	13.4	:	12.1	:	27.6	7.0	24.0	14.4	:	:
Large (40+)	15.9	:	:	:	10.5	2.3	:	4.9	:	5.6	:	18.2	7.5	:	:
Average	15.2	:	:	:	10.4	2.9	:	5.6	:	:	:	19.5	9.9	:	:
Other services n.e.s. (NACE Sections H, J and K)															
Small (0-7)	6.5	:	:	:	18.7	3.7	:	6.1	:	:	:	6.4	9.5	:	:
Medium (7-40)	8.1	:	:	:	11.7	7.5	:	5.2	:	11.0	12.5	9.2	3.4	:	:
Large (40+)	6.6	:	:	:	7.8	8.2	:	3.0	:	11.6	7.5	33.3	4.6	:	:
Average	6.7	:	:	:	8.3	7.1	:	4.2	:	:	:	8.7	6.2	:	:
Industry & services (excluding public administration) (NACE Sections C to K)															
Small (0-7)	7.7	:	:	:	14.5	7.2	:	11.9	:	:	:	7.4	14.5	:	:
Medium (7-40)	7.8	:	:	:	9.3	7.2	:	6.3	:	11.2	:	11.1	8.8	:	:
Large (40+)	5.7	:	:	:	7.3	3.3	:	5.2	:	4.9	:	14.0	7.0	:	:
Average	7.0	:	:	:	7.6	4.1	:	5.9	:	:	:	11.1	8.1	:	:

(1) Indebtedness defined as amounts owed to credit institutions - long term debt; size classes are defined in terms of turnover thresholds in millions of euro.
Source: European Commission - Directorate-General Economic and Financial Affairs, BACH database

Table 2.2.8: Gross operating rate, 2000 (%) (1)

	B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK	NO
Extractive industries (NACE Section C)																
Total	22.1	63.6	15.1	:	16.1	5.7	16.2	44.0	:	:	27.8	21.8	15.0	14.2	55.4	:
Micro (1-9)	24.2	70.6	36.2	:	25.7	-1.0	24.2	26.4	:	:	27.2	44.1	24.4	15.9	63.9	:
Small (10-49)	16.2	44.6	11.9	:	23.2	15.3	15.9	18.7	:	:	21.3	17.8	11.9	17.0	46.0	:
Medium (50-249)	22.2	:	15.7	:	23.1	15.5	18.8	24.4	:	:	:	:	18.0	15.0	54.6	:
Large (250+)	:	:	12.5	:	-0.2	-11.9	12.8	31.7	:	:	:	:	16.3	7.2	55.7	:
Manufacturing (NACE Section D)																
Total	9.4	11.3	6.9	:	10.5	6.7	25.7	10.9	:	11.1	11.4	11.1	14.9	9.7	12.7	7.9
Micro (1-9)	13.8	19.1	3.6	:	11.6	6.0	18.4	19.4	:	16.5	20.1	10.1	15.5	11.5	23.1	11.4
Small (10-49)	9.4	10.6	11.6	:	10.3	6.8	22.8	12.5	:	10.2	12.3	9.5	10.9	8.2	15.5	7.0
Medium (50-249)	8.6	9.6	8.0	:	11.3	6.8	18.3	10.3	:	9.3	9.7	9.9	10.1	8.8	11.1	7.4
Large (250+)	9.3	11.3	6.2	:	9.9	6.9	28.6	8.1	:	11.3	11.3	12.7	16.3	9.9	11.7	8.0
Electricity, gas & water supply (NACE Section E)																
Total	16.1	16.3	16.0	:	26.0	20.7	27.8	25.4	:	21.6	24.3	24.3	17.7	23.6	18.9	:
Micro (1-9)	31.3	16.6	34.2	:	27.5	24.2	:	32.8	:	39.8	26.9	33.0	11.1	31.2	34.2	:
Small (10-49)	21.4	15.6	23.2	:	21.6	10.6	:	14.0	:	11.1	20.7	25.1	18.4	17.4	2.0	:
Medium (50-249)	12.5	15.2	16.0	:	28.0	11.1	:	21.1	:	17.1	:	21.9	24.7	21.5	7.8	:
Large (250+)	10.4	17.2	14.8	:	26.0	21.3	:	26.3	:	22.0	:	23.7	15.7	24.2	19.8	:
Construction (NACE Section F)																
Total	9.6	10.8	6.0	:	:	6.5	17.6	15.4	:	:	9.6	:	10.5	7.0	15.8	:
Micro (1-9)	16.4	20.5	6.6	:	:	12.8	:	21.2	:	:	16.6	:	19.0	12.1	25.3	:
Small (10-49)	7.5	8.9	8.2	:	:	5.0	:	11.2	:	:	11.0	:	9.7	1.8	18.9	:
Medium (50-249)	5.4	5.6	4.6	:	:	2.6	14.3	6.2	:	:	7.3	:	6.1	0.3	12.9	:
Large (250+)	4.6	4.2	2.6	:	:	0.8	15.4	4.1	:	:	5.7	:	6.0	8.3	7.7	:

(1) Gross operating rate is defined as (value added-personnel costs)/turnover*100; DK, F, and NO, 1999. B, NACE Section C for medium-sized enterprises, 1998; NACE Section E for medium-sized and large enterprises, 1998; otherwise 1999. D, NACE Sections F, 1999; NACE Section E, 1998. IRL, 1999, except large enterprises for NACE Section F, 1998. I, medium-sized and large enterprises for NACE Section C, 1998. A, NACE Section F, 1999. FIN, small enterprises for NACE Section C, 1999; medium-sized and large enterprises for NACE Section C, 1998. S, NACE Sections F, 1999; medium-sized and large enterprises for NACE Section C, 1999.

Source: Eurostat - Structural Business Statistics (theme 4/SBS/sizclass)

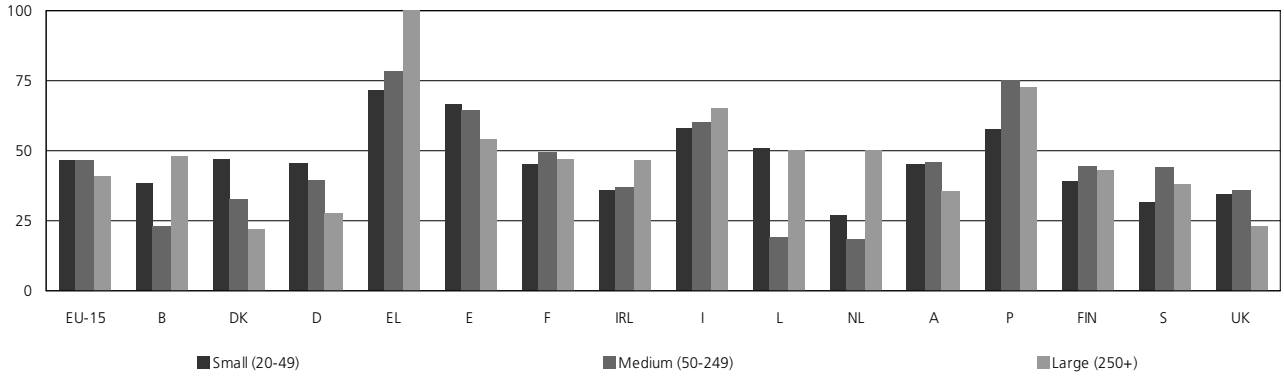
ACCESS TO FINANCE (FOR INNOVATION)

A Flash Eurobarometer survey on innovation was conducted on behalf of the Enterprise Directorate-General between 23 April and 11 May 2001. It provides information on the attitudes of enterprises with respect to financing innovation. When enterprises in the EU were asked if broader access to finance (via stock markets, venture capital, etc) could interest them as regards their innovation efforts, some 46% of small enterprises and 47% of medium-sized enterprises were favourable, compared to just 41% of large enterprises - see figure 2.2.4. National differences were of more significance, with considerably more than half of the enterprises in the southern Member States agreeing that broader access would be beneficial. Large enterprises were noticeably less interested in additional means of securing finance in the larger Member States of the EU (excluding Italy), perhaps due to capital markets already being highly developed.

When questioned, some 75% of enterprises in the EU agreed that banks and investors were sufficiently willing to back-up their innovative efforts - see figure 2.2.5. The figure for small enterprises was above the average (78%), with medium-sized enterprises (73%) least satisfied. At an individual country level, small enterprises in seven of the Member States (including Germany, France and the United Kingdom) were more favourable than the average as regards the role of banks and other investors. When performing the same analysis for large enterprises, there were nine Member States (including Germany, Spain, France and the United Kingdom) where large enterprises were more favourable than the average to the role of banks and other investors.

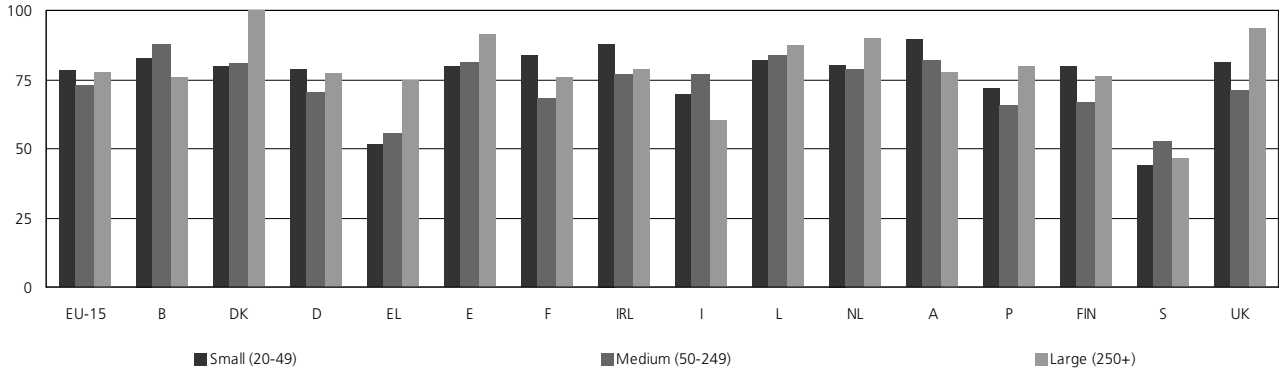
Far fewer enterprises in the EU were of the opinion that the tax system encouraged innovative behaviour, an average of just 18% of those surveyed- see figure 2.2.6. Large enterprises (22%) reported a higher than average proportion of respondents with a favourable opinion on their national tax system, with medium-sized enterprises the least content (16%). Ireland, Luxembourg and the Netherlands all reported that more than half of their enterprises agreed that the national tax system encouraged innovative behaviour. In Belgium, Spain, Finland and the United Kingdom the proportion lay between 20% and 30%, falling below 20% in the remaining Member States.

Figure 2.2.4: Could a broader European access to finance (via stock markets, venture capital, etc) interest your enterprise as regards its innovation efforts, May 2001 (% of respondents replying certainly or probably yes) (1)



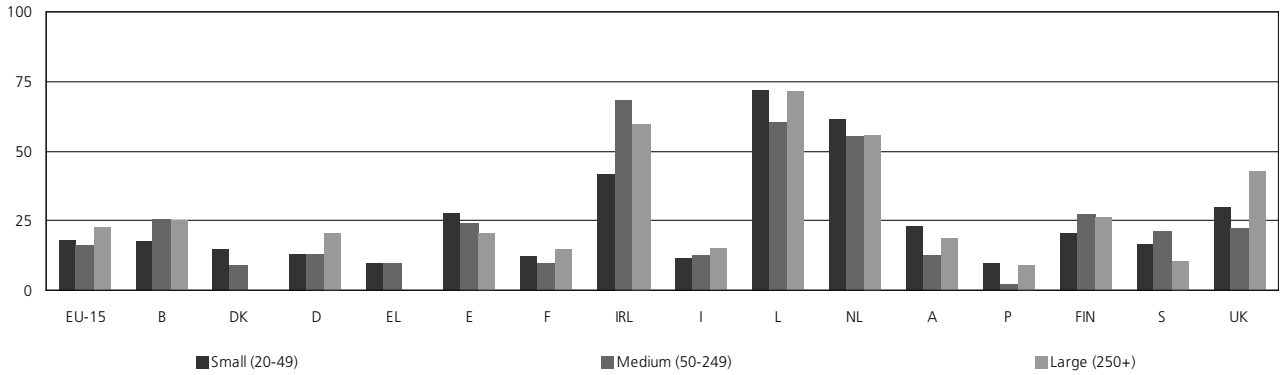
(1) Activity coverage is NACE Sections D, F, G, H, I, J, K. Percentage values reported in the table exclude respondents that answered do not know and respondents who failed to answer.
Source: Eurobarometer - Flash Eurobarometer 100

Figure 2.2.5: Are banks and investors sufficiently ready to back-up your innovative efforts, May 2001 (% of respondents replying certainly or probably yes) (1)



(1) Activity coverage is NACE Sections D, F, G, H, I, J, K. Percentage values reported in the table exclude respondents that answered do not know and respondents who failed to answer.
Source: Eurobarometer - Flash Eurobarometer 100

Figure 2.2.6: Does the tax system in your country sufficiently encourage innovation in your enterprise, May 2001 (% of respondents replying certainly or probably yes) (1)



(1) Activity coverage is NACE Sections D, F, G, H, I, J, K. Percentage values reported in the table exclude respondents that answered do not know and respondents who failed to answer.
Source: Eurobarometer - Flash Eurobarometer 100

2.3: SMEs AND INNOVATION

The innovation and SMEs programme, which is one of horizontal character within the Fifth RTD Framework Programme, places innovation at the heart of European research and development policy. The creation of wealth and employment depends to a large degree on the speed with which scientific and technological breakthroughs are converted into working processes and products; innovation requires not only scientific or technological understanding, but also capital and management skills.

This section examines the extent of innovative activity in the EU and shows that large enterprises have a high propensity to innovate in practically all of the Member States, while the proportion of small or medium-sized enterprises that innovate varies much more. The expenditure by small enterprises on innovation (as a share of their turnover) is however similar to that recorded for large enterprises, particularly in the service sector, where innovation is concentrated among relatively few enterprises.

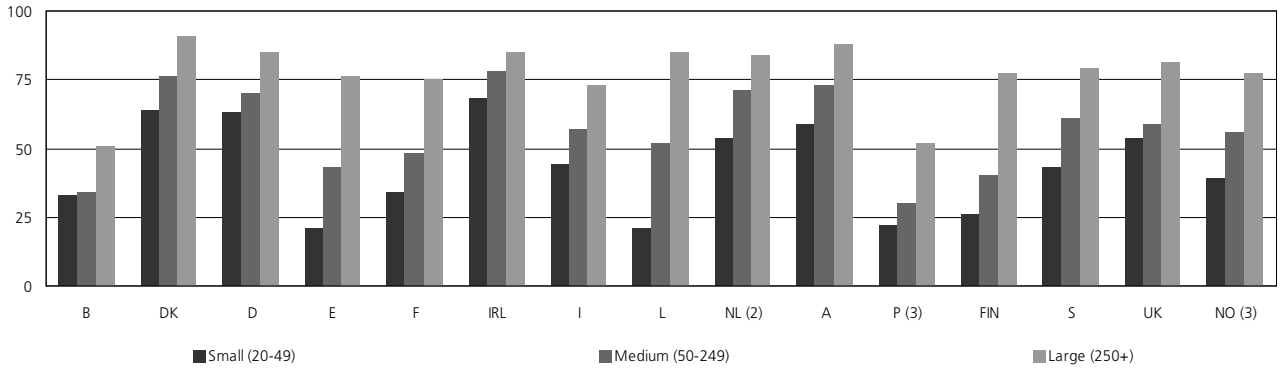
COMMUNITY INNOVATION SURVEY

The second Community Innovation Survey (CIS2)[8] provides information on innovation activity in the EU. The survey defines innovators as enterprises that introduced technologically new or improved products, processes or services during the reference period (1996/1997). The concept includes the successful implementation of activities such as R&D; the acquisition of machinery, software or other external technology; training; and market introduction. “New” does not necessarily mean new to the world, country or even the enterprise's market; the requirement is that the product, process or service is new to the enterprise being surveyed. An enterprise is therefore considered as an innovating enterprise when it launches a product or service that is different from those it has previously offered, or alternatively the enterprise introduces a new or modified production process. Innovators can therefore be engaged in imitation, using already known and applied technology.

In 1996, just over half (51%[9]) of the enterprises in the EU's manufacturing sector were innovators. There were significant country differences, as Ireland (73%), Denmark (71%), Germany (69%) and Austria (67%) exhibited a much higher share of innovators than Belgium (34%), Spain (29%) or Portugal (26%) - see figure 2.3.1. Small enterprises in the manufacturing sector were less likely to be innovators than medium-sized or large enterprises; this observation was true for every Member State. The proportion of large enterprises in the manufacturing sector that were innovating generally lay within the range of 73% (Italy) to 91% (Denmark)[10], with a wider disparity between the results for smaller enterprises, that were found within the range of 21% (Luxembourg and Spain) to 68% (Ireland)[11].

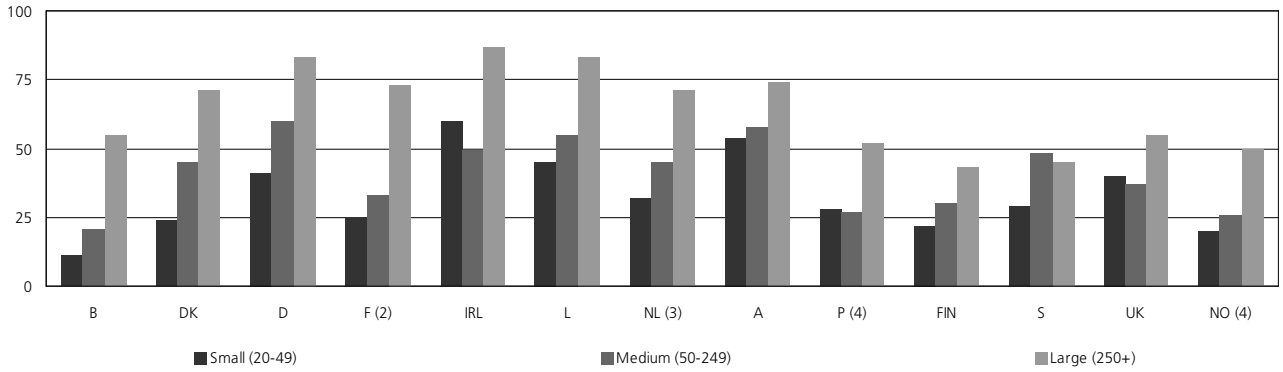
(8) Note that the CIS3 has been undertaken and data is in the process of being treated.
(9) EL, not available.
(10) B and P report rates just over 50%; EL, not available.
(11) EL, not available.

Figure 2.3.1: Enterprises introducing innovation in the manufacturing sector, 1996 (%) (1)



(1) Activity coverage is NACE Section D. EL, not available. (2) Medium-sized enterprises are defined as 50-199 employees and large enterprises as 200 employees or more. (3) 1997.
Source: Eurostat - CIS2 (NewCronos/theme9/innovat)

Figure 2.3.2: Enterprises introducing innovation in the service sector, 1996 (%) (1)



(1) Aggregation of NACE 51, 60 to 62, 64.2, 65, 72 and 74.2; EL, E and I, not available. (2) Excluding NACE 51. (3) Medium-sized enterprises are defined as 50-199 employees and large enterprises as 200 employees or more. (4) 1997.
Source: Eurostat - CIS2 (NewCronos/theme9/innovat)

In the service sector, 40%[12] of enterprises in the EU were innovating, a considerably lower share than in manufacturing. The highest proportion of innovators was again found in Ireland (58%), whilst Belgium had the lowest share (13%) - see figure 2.3.2. Small enterprises normally had the lowest propensity to innovate, with Ireland the main exception to this rule (60% of small enterprises innovated); in Portugal and the United Kingdom there were similar proportions of innovating small and medium-sized enterprises.

(12) EL, E and I, not available.

This descriptive picture of innovation activity fails to measure either the intensity or quality of innovation. It is perhaps not surprising to find that large enterprises tend to innovate more than small enterprises, as the majority of them have (higher) research and development budgets and (more) diverse production programmes; as a result they are more likely to introduce new products and/or processes. This may be particularly true when large enterprises operate in activities that are characterised by economies of scale, or activities that are highly capital or technology intensive. However, in some service activities, SMEs have considerably more scope to enter markets, offering tailor-made products that exploit their strengths of flexibility and responsiveness to customers' needs.

"Innovation intensity" is defined as the ratio of innovation expenditure to turnover. It includes all spending related to scientific, technological, commercial, financial and organisational steps which are intended to, or actually lead to, the implementation of new or improved goods, processes or services. On average, the amount of expenditure allocated to innovation in the EU corresponded to 3.7% of turnover in the manufacturing sector and 2.8%[13] of turnover in the service sector in 1996.

A breakdown by size class within the manufacturing sector shows that differences in innovation expenditure were less pronounced than figures concerning the number of innovators - see figure 2.3.3. Indeed, in Denmark, Austria and the United Kingdom, small enterprises reported a higher innovation intensity ratio than medium-sized or large enterprises.

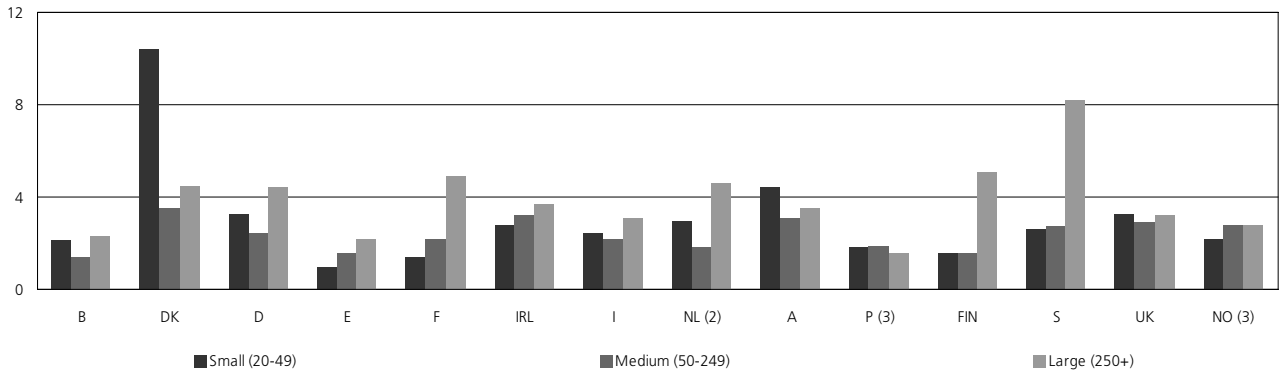
For services there was an even weaker link between the average size of an enterprise and its expenditure on innovation; the lowest innovation intensity ratio was often recorded by medium-sized enterprises. Germany, Ireland, the Netherlands, Portugal, Finland and the United Kingdom all reported small enterprises with a higher innovation intensity ratio than medium-sized or large enterprises - see figure 2.3.4.

Considering only enterprises that innovate (in other words, excluding the turnover of non-innovators), small enterprises in the manufacturing sector reported a higher rate of innovation intensity (5.1%) than large enterprises (4.7%). This situation was even more pronounced in the service sector, with 10.2% of turnover devoted to innovation in small enterprises, compared to 3.1% in large enterprises. These differences may be attributed to innovation expenditure being concentrated within relatively few small enterprises, whilst innovation expenditure is spread across the majority of large enterprises. This pattern was found for most Member States, with Sweden the main exception, as there was a high concentration of expenditure in relatively few large enterprises.

Table 2.3.1 details the proportion of innovative enterprises that are engaged in R&D co-operation. Industry clusters are often cited as an example of co-operation, partnerships and alliances, creating centres of excellence that allow SMEs and large enterprises to build-up contacts with customers, suppliers and competitors, to pool their resources and knowledge, thus creating hubs of innovative activity.

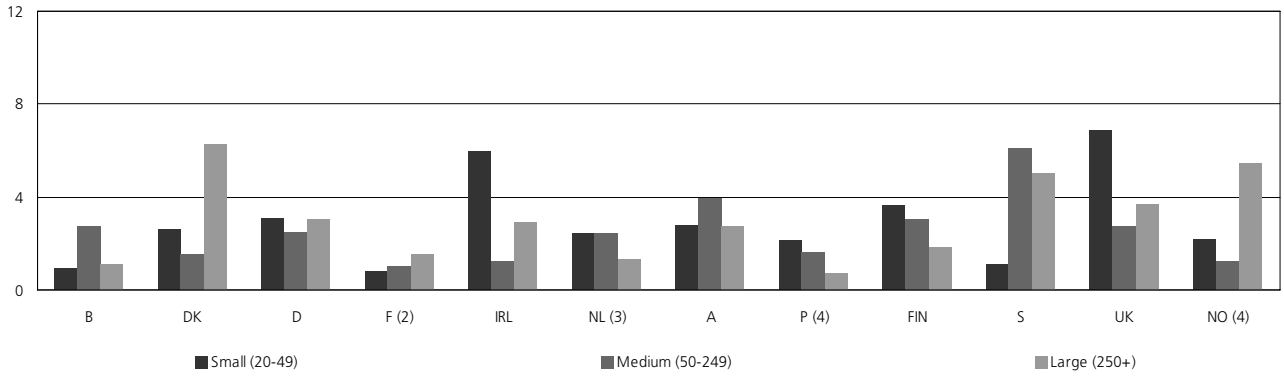
(13) Excluding wholesale trade and financial intermediation; EL, E, I and L, not available.

Figure 2.3.3: Innovation expenditure relative to turnover in the manufacturing sector, 1996 (%) (1)



(1) Activity coverage is NACE Section D. EL and L, not available. (2) Medium-sized enterprises are defined as 50-199 employees and large enterprises as 200 employees or more. (3) 1997.
Source: Eurostat - CIS2 (NewCronos/theme9/innovat)

Figure 2.3.4: Innovation expenditure relative to turnover in the service sector, 1996 (%) (1)



(1) Aggregation of NACE 51, 60 to 62, 64.2, 65, 72 and 74.2; EL, E, I and L, not available. (2) Excluding NACE 51. (3) Medium-sized enterprises are defined as 50-199 employees and large enterprises as 200 employees or more. (4) 1997.
Source: Eurostat - CIS2 (NewCronos/theme9/innovat)

Table 2.3.1: Innovative enterprises involved in R&D co-operation, 1996 (%)

	B	DK	D	EL	E	F	IRL	I	L	NL (1)	A	P (2)	FIN	S	UK	NO (2)
MANUFACTURING (3)																
Small (20-49)	24	55	22	:	11	26	26	8	6	20	14	19	57	43	22	35
Medium (50-249)	33	54	22	:	25	35	38	15	37	30	27	18	72	63	36	56
Large (250+)	69	76	37	:	50	61	84	35	37	59	42	35	93	85	53	81
Average (20+)	32	57	24	:	21	35	36	11	29	29	23	20	71	59	32	49
SERVICES (4)																
Small (20-49)	43	71	14	:	:	32	23	:	38	23	16	22	61	42	27	57
Medium (50-249)	45	51	22	:	:	43	14	:	70	33	21	30	59	62	25	67
Large (250+)	58	72	22	:	:	33	77	:	54	55	37	35	57	70	53	80
Average (20+)	45	66	17	:	:	35	23	:	46	28	18	23	60	48	28	61

(1) Medium-sized enterprises are defined as 50-199 employees and large enterprises as 200 employees or more. (2) 1997. (3) Activity coverage is NACE Section D. (4) Aggregation of NACE 51, 60 to 62, 64.2, 65, 72 and 74.2; F, excluding NACE 51.
Source: Eurostat - CIS2 (NewCronos/theme9/innovat)

Table 2.3.2: Objectives of innovation in the manufacturing sector, 1996 (% of innovators stating objective as very important - multiple answers allowed) (1)

	B	DK	D	EL	E	F	IRL	I	L	NL (2)	A	P (3)	FIN	S	UK	NO (3)
Reduce environmental damage																
Small (20-49)	27	22	23	:	44	12	21	25	31	12	25	29	8	33	30	19
Medium (50-249)	21	29	25	:	43	12	20	25	23	11	20	24	10	24	25	21
Large (250+)	24	20	30	:	54	19	36	30	37	17	26	32	12	30	29	28
Average (20+)	25	25	25	:	45	13	22	25	28	12	23	27	10	29	28	21
Extend product or service range																
Small (20-49)	47	28	56	:	49	51	57	37	51	24	29	30	21	30	47	35
Medium (50-249)	49	24	45	:	50	52	51	35	78	32	35	37	28	35	41	47
Large (250+)	64	30	49	:	54	55	60	42	31	32	38	41	28	34	37	46
Average (20+)	50	27	50	:	50	52	55	37	59	28	33	34	25	33	43	41
Improve product or service quality																
Small (20-49)	49	38	59	:	79	51	60	57	38	29	46	71	36	54	68	57
Medium (50-249)	59	36	64	:	84	53	57	60	53	32	50	70	33	61	62	62
Large (250+)	50	35	65	:	80	56	56	56	75	36	57	71	34	57	67	63
Average (20+)	52	37	62	:	81	53	59	58	55	31	49	70	34	58	66	60
Reduce labour cost																
Small (20-49)	41	30	47	:	31	21	44	43	45	18	58	36	21	33	46	56
Medium (50-249)	33	30	51	:	29	25	28	41	41	19	37	43	21	46	41	47
Large (250+)	28	34	54	:	28	32	36	36	57	24	43	38	19	30	50	48
Average (20+)	37	30	50	:	30	25	37	42	46	19	47	39	20	38	45	51
Reduce material consumption																
Small (20-49)	26	16	32	:	28	16	35	21	25	8	21	14	15	30	40	27
Medium (50-249)	26	22	33	:	32	19	21	19	12	13	29	30	17	35	38	28
Large (250+)	31	20	40	:	38	28	37	23	30	19	29	29	16	29	42	35
Average (20+)	27	19	34	:	30	19	30	20	19	11	25	22	16	32	39	28
Reduce energy consumption																
Small (20-49)	13	23	24	:	31	16	25	22	18	7	26	18	5	13	28	16
Medium (50-249)	15	20	26	:	27	18	14	19	23	9	18	25	8	21	24	15
Large (250+)	19	19	29	:	34	26	16	20	37	12	21	26	6	20	25	20
Average (20+)	14	22	25	:	30	18	20	21	25	9	22	22	6	18	26	16
Open up new markets or increase market share																
Small (20-49)	60	52	48	:	74	58	74	46	59	22	51	41	31	54	61	55
Medium (50-249)	57	39	41	:	77	60	68	49	71	30	47	53	34	56	65	61
Large (250+)	71	45	51	:	78	68	69	47	66	36	54	51	35	56	66	69
Average (20+)	61	46	45	:	76	60	71	47	67	26	50	47	33	55	63	59
Improve production or internal business process flexibility																
Small (20-49)	27	12	40	:	44	21	34	28	17	18	26	26	25	26	33	41
Medium (50-249)	24	40	38	:	44	21	24	28	36	19	27	37	21	27	36	34
Large (250+)	17	22	39	:	44	21	35	25	37	22	26	40	20	21	33	27
Average (20+)	25	24	39	:	44	21	30	28	32	19	26	32	22	26	34	37
Replace products or services being phased out																
Small (20-49)	19	20	23	:	17	19	41	11	22	15	20	12	19	43	27	20
Medium (50-249)	16	11	23	:	19	24	40	18	35	17	22	22	27	38	30	20
Large (250+)	27	24	34	:	20	29	33	25	41	26	21	17	32	48	39	18
Average (20+)	19	17	25	:	18	23	40	14	33	17	21	16	25	41	30	20
Fulfilling regulations and standards																
Small (20-49)	15	10	14	:	:	27	31	28	24	14	14	27	16	30	40	32
Medium (50-249)	24	12	17	:	:	27	27	24	12	13	13	23	7	30	27	19
Large (250+)	19	14	10	:	:	27	20	22	39	17	16	20	13	24	32	21
Average (20+)	18	11	15	:	:	27	28	27	22	14	14	25	12	29	34	25

(1) Activity coverage is NACE Section D. (2) Medium-sized enterprises are defined as 50-199 employees and large enterprises as 200 employees or more. (3) 1997.
Source: Eurostat - CIS2 (NewCronos/theme9/innovat)

Tables 2.3.2 (on the previous page) and 2.3.3 (below) cover the objectives behind enterprises' decisions to innovate. In the manufacturing sector the two most important reasons for innovating were to improve product or service quality and to open-up new markets or increase market share. Large enterprises tended to cite both of these reasons more than either small or medium-sized enterprises. There were just two objectives where small enterprises gave the highest proportion of answers (relative to enterprises of other size classes) - they were, to reduce labour costs and to fulfil regulations and standards. In the service sector the two most important objectives were the same as in the manufacturing sector, with small enterprises placing particular emphasis on opening-up new markets or increasing their market share.

Table 2.3.3: Objectives of innovation in the service sector, 1996
(% of innovators stating objective as very important - multiple answers allowed) (1)

	B	DK	D	EL	E	F (2)	IRL	I	L	NL (3)	A	P (4)	FIN	S	UK	NO (4)
Reduce environmental damage																
Small (20-49)	7	:	21	:	:	4	9	:	12	14	3	39	12	24	22	10
Medium (50-249)	7	8	23	:	:	9	:	:	7	7	9	25	13	11	17	7
Large (250+)	13	20	12	:	:	12	4	:	15	12	10	7	8	17	12	14
Average (20+)	7	4	21	:	:	6	7	:	11	12	4	36	12	21	20	10
Extend product or service range																
Small (20-49)	51	55	64	:	:	48	31	:	83	32	4	45	28	40	33	54
Medium (50-249)	46	44	52	:	:	56	43	:	88	27	19	27	48	64	49	59
Large (250+)	69	46	48	:	:	64	29	:	94	33	33	46	25	44	42	60
Average (20+)	52	51	60	:	:	53	33	:	85	30	8	43	31	45	36	55
Improve product or service quality																
Small (20-49)	70	45	75	:	:	55	72	:	81	36	44	84	52	56	61	65
Medium (50-249)	64	62	80	:	:	62	75	:	100	30	59	81	60	65	65	74
Large (250+)	75	39	86	:	:	66	92	:	85	36	70	88	52	59	84	59
Average (20+)	69	49	77	:	:	59	74	:	86	35	48	84	54	58	63	66
Reduce labour cost																
Small (20-49)	17	8	45	:	:	13	24	:	21	14	31	41	17	23	35	31
Medium (50-249)	29	27	51	:	:	10	28	:	10	21	45	31	14	13	23	38
Large (250+)	22	20	52	:	:	31	63	:	51	20	52	38	14	25	43	48
Average (20+)	19	14	47	:	:	16	26	:	20	16	34	39	16	21	34	34
Reduce material consumption																
Small (20-49)	9	:	24	:	:	6	11	:	5	1	7	33	6	13	23	11
Medium (50-249)	4	15	21	:	:	4	13	:	5	3	2	27	10	4	9	15
Large (250+)	3	13	17	:	:	11	5	:	9	4	11	17	:	6	6	10
Average (20+)	8	5	22	:	:	7	11	:	5	2	6	32	6	11	20	12
Reduce energy consumption																
Small (20-49)	10	:	19	:	:	5	5	:	11	8	4	28	7	13	23	9
Medium (50-249)	7	12	23	:	:	8	8	:	:	4	8	25	8	8	14	6
Large (250+)	8	14	9	:	:	12		:	15	7	15	14	4	10	10	9
Average (20+)	9	4	19	:	:	7	6	:	9	7	5	28	7	12	21	8
Open up new markets or increase market share																
Small (20-49)	57	58	42	:	:	56	64	:	72	33	23	61	44	65	66	56
Medium (50-249)	53	34	42	:	:	60	53	:	68	33	39	52	31	61	73	63
Large (250+)	58	47	40	:	:	52	27	:	68	37	42	60	32	53	63	59
Average (20+)	56	51	42	:	:	56	60	:	70	33	26	60	40	63	67	57
Improve production or internal business process flexibility																
Small (20-49)	28	38	48	:	:	15	40	:	35	18	17	29	21	21	26	20
Medium (50-249)	28	47	62	:	:	19	45	:	34	26	32	38	30	14	22	28
Large (250+)	39	20	66	:	:	32	80	:	44	31	32	46	45	24	37	28
Average (20+)	29	39	52	:	:	19	42	:	35	21	20	31	24	19	26	22
Replace products or services being phased out																
Small (20-49)	7	36	14	:	:	21	16	:	23	19	23	21	30	21	19	38
Medium (50-249)	9	24	19	:	:	20	18	:	29	20	26	13	42	19	41	41
Large (250+)	6	22	15	:	:	25	8	:	34	22	23	38	25	41	20	48
Average (20+)	8	32	15	:	:	22	16	:	25	19	23	21	32	21	22	39
Fulfilling regulations and standards																
Small (20-49)	27	21	12	:	:	20	15	:	36	12	6	35	9	28	26	19
Medium (50-249)	14	17	22	:	:	20	28	:	31	10	11	54	20	15	34	15
Large (250+)	22	17	15	:	:	26	6	:	51	10	10	20	10	22	40	11
Average (20+)	24	19	14	:	:	21	17	:	36	11	7	37	11	25	28	17

(1) Aggregation of NACE 51, 60 to 62, 64.2, 65, 72 and 74.2. (2) Excluding NACE 51. (3) Medium-sized enterprises are defined as 50-199 employees and large enterprises as 200 employees or more. (4) 1997.
Source: Eurostat - CIS2 (NewCronos/theme9/innovat)

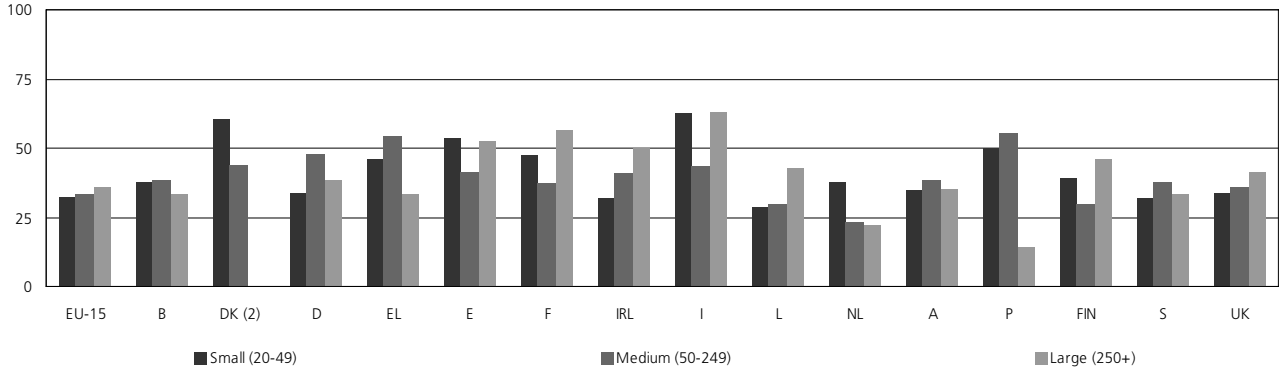
FLASH EUROBAROMETER ON INNOVATION

A Flash Eurobarometer survey on innovation was conducted on behalf of the Enterprise Directorate-General between 23 April and 11 May 2001. It provides an indication of more recent innovation trends, concentrating in particular on factors that drive enterprises to innovate and constraints that prevent them from innovating, issues of particular relevance for policy makers.

Figure 2.3.5 shows that 36% of large enterprises in the EU generated more than 10% of their turnover from new innovations, compared to an average of 33% for SMEs. This observation did not hold across all Member States, as the proportion of small enterprises in Belgium, the Netherlands, Greece, Spain and Portugal that generated more than 10% of their turnover from new innovations was higher than the corresponding share for large enterprises.

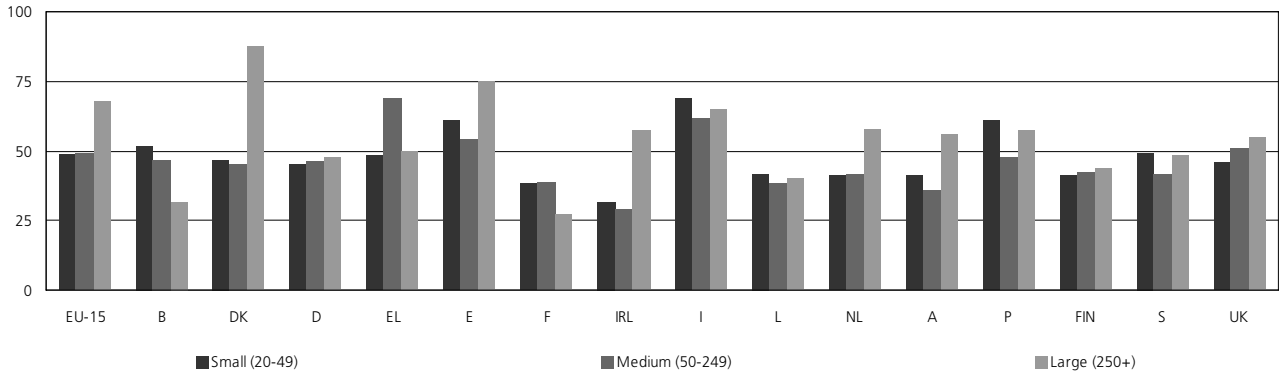
Figure 2.3.6 shows that 68% of large enterprises in the EU spent more than 10% of their investment on innovation, compared to an average of 49% of SMEs. The proportion of small enterprises that invested more than 10% of their investment on innovation was very close to the corresponding figure for medium-sized enterprises. However, these EU averages usually resulted from a limited number of countries reporting a considerably higher proportion of enterprises spending more than 10% of their investment on innovation. For medium-sized enterprises this was the case in Greece, Italy, Spain and the United Kingdom, and the same was true for small enterprises in Italy, Spain, Portugal, Belgium and Sweden - otherwise, all other countries were below the EU average.

Figure 2.3.5: Enterprises generating more than 10% of their turnover from products that are either new or have been renewed in the last two years, May 2001 (% of enterprises) (1)



(1) Activity coverage is NACE Sections D, F, G, H, I, J and K. Percentage values reported exclude respondents that answered do not know and respondents who failed to answer. (2) Large enterprises, not available.
Source: Eurobarometer - Flash Eurobarometer 100

Figure 2.3.6: Enterprises spending more than 10% of their investment on innovation in the last two years, May 2001 (% of enterprises) (1)



(1) Activity coverage is NACE Sections D, F, G, H, I, J and K. Percentage values reported exclude respondents that answered do not know and respondents who failed to answer.
Source: Eurobarometer - Flash Eurobarometer 100

According to this survey (see table 2.3.4), market share and profitability were the most important drivers of innovation activity - re-enforcing the findings of the CIS2. This was particularly true for large enterprises in the EU, where shareholder value was also considerably more important than it was for SMEs. In relative terms (compared to the results for large enterprises), innovation in medium-sized enterprises was principally driven by a desire to protect enterprise independence. Some 39% of medium-sized enterprises cited this reason, 5 percentage points more than the equivalent figure for small enterprises and 8 percentage points more than for large ones.

As regards access to technology, most enterprises favoured two specific means of obtaining technology: acquiring advanced equipment or co-operation with suppliers and/or customers - see table 2.3.5. Large enterprises were somewhat less reliant on both of these means, although they reported a considerably higher reliance on in-house R&D (42% of enterprises in the EU), compared to an average of 30%.

Table 2.3.4: What are the two most important drivers of innovative activity in your enterprise, May 2001 (% of respondents - only two answers) (1)

	EU-15	B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK
Market share & profitability																
Small (20-49)	79	74	86	75	92	79	88	86	87	72	81	77	84	37	75	77
Medium (50-249)	80	74	85	83	88	77	78	92	81	49	82	82	78	32	73	77
Large (250+)	86	80	89	86	75	92	89	88	90	88	89	89	73	50	73	84
Average (20+)	80	75	85	80	89	79	83	89	84	63	83	81	79	39	74	78
Shareholder value, investors																
Small (20-49)	13	16	14	10	6	8	7	9	9	13	14	10	16	78	22	24
Medium (50-249)	8	8	11	8	5	3	6	31	4	7	5	10	9	82	11	17
Large (250+)	21	16	11	22	25	17	11	19	15	25	32	0	9	81	30	40
Average (20+)	12	12	12	11	6	6	7	19	6	11	11	9	11	80	18	24
Protecting enterprise independence																
Small (20-49)	35	30	27	41	25	14	30	33	31	35	43	55	19	33	25	37
Medium (50-249)	39	29	24	48	36	22	41	31	34	33	33	60	31	43	37	40
Large (250+)	32	8	22	45	25	21	31	19	35	25	16	47	18	38	20	20
Average (20+)	37	26	25	45	32	19	36	30	33	33	35	57	26	37	30	35
Creating jobs																
Small (20-49)	23	21	27	28	6	25	19	16	14	26	10	26	19	35	15	24
Medium (50-249)	21	20	14	25	7	19	20	5	21	31	22	22	22	29	22	18
Large (250+)	17	20	11	18	0	13	23	6	20	25	5	32	9	42	7	12
Average (20+)	21	20	17	25	6	20	20	10	18	28	16	25	20	35	18	20
Complying with environmental regulations																
Small (20-49)	16	15	14	13	14	21	17	14	36	17	25	15	19	0	6	5
Medium (50-249)	17	27	21	14	2	20	8	5	23	13	29	15	28	4	4	17
Large (250+)	17	16	22	8	25	17	20	19	25	0	32	26	36	4	13	14
Average (20+)	16	21	19	13	7	20	13	11	27	14	28	16	26	2	6	12
Complying with other regulations																
Small (20-49)	10	7	4	8	6	8	12	9	9	7	13	4	16	0	2	17
Medium (50-249)	10	6	6	3	2	11	11	8	19	9	17	10	6	0	4	14
Large (250+)	8	16	11	8	0	0	6	6	5	0	16	5	18	0	7	16
Average (20+)	10	7	6	6	3	9	11	8	14	7	15	8	10	0	4	15

(1) Activity coverage is NACE Sections D, F, G, H, I, J and K. Percentage values reported exclude respondents that answered do not know and respondents who failed to answer.
Source: Eurobarometer - Flash Eurobarometer 100

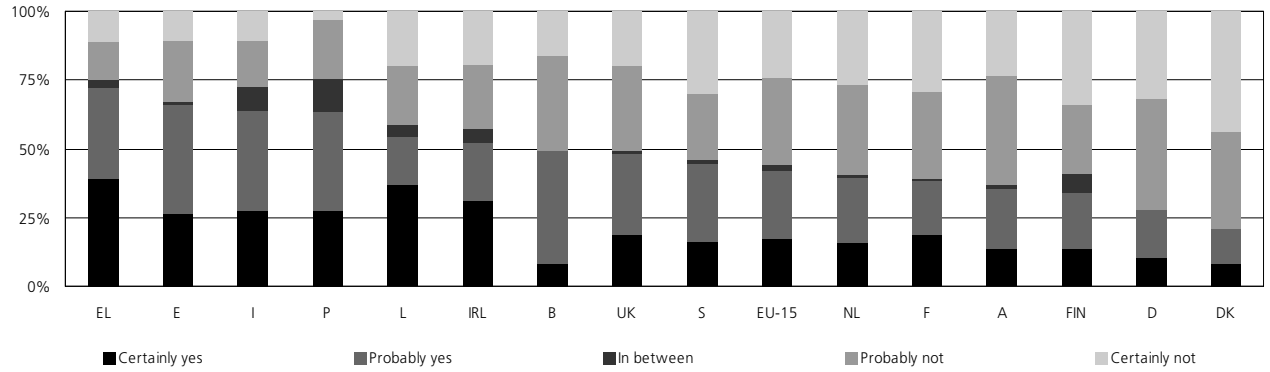
Table 2.3.5: What are the two most important ways that your enterprise accesses technology, May 2001 (% of respondents - only two answers) (1)

	EU-15	B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK
Acquiring advanced equipment																
Small (20-49)	60	46	49	68	74	66	53	36	61	56	49	56	73	54	19	50
Medium (50-249)	63	51	53	67	64	76	54	48	66	47	64	61	71	57	31	57
Large (250+)	57	52	67	57	100	71	60	27	70	78	50	63	82	38	23	35
Average (20+)	61	50	53	65	69	72	54	39	65	54	56	60	73	51	25	51
Conducting in-house R&D																
Small (20-49)	30	32	20	24	23	27	33	40	50	27	31	34	18	39	27	30
Medium (50-249)	28	22	16	23	27	19	23	18	42	20	22	23	15	50	21	38
Large (250+)	42	48	44	35	33	29	46	20	45	22	45	26	0	77	40	55
Average (20+)	30	28	18	26	26	23	30	28	45	23	28	27	14	52	26	38
Co-operation with suppliers / customers																
Small (20-49)	50	44	53	51	26	36	47	62	47	62	69	61	48	61	63	51
Medium (50-249)	53	57	67	56	44	34	58	68	46	62	69	70	56	54	66	51
Large (250+)	46	43	67	41	67	33	37	67	45	33	50	68	73	54	73	53
Average (20+)	51	51	63	52	38	35	51	65	46	60	67	66	56	57	66	52
Co-operation with universities / R&D specialists																
Small (20-49)	11	25	16	10	6	10	4	5	12	11	19	17	15	20	22	10
Medium (50-249)	10	5	11	9	10	8	7	8	12	4	15	15	2	11	20	10
Large (250+)	15	26	44	22	0	4	3	13	15	11	15	21	18	19	13	18
Average (20+)	11	14	14	12	8	9	5	7	12	8	17	16	8	17	20	11
Intellectual property licensing																
Small (20-49)	15	11	6	15	9	10	11	17	10	7	22	10	15	9	6	26
Medium (50-249)	9	8	3	12	0	4	7	10	7	9	15	9	0	0	8	10
Large (250+)	14	4	0	14	0	17	26	13	0	0	20	11	9	0	3	18
Average (20+)	12	8	4	13	3	7	11	13	8	7	19	9	6	4	7	18

(1) Activity coverage is NACE Sections D, F, G, H, I, J and K. Percentage values reported exclude respondents that answered do not know and respondents who failed to answer.
Source: Eurobarometer - Flash Eurobarometer 100

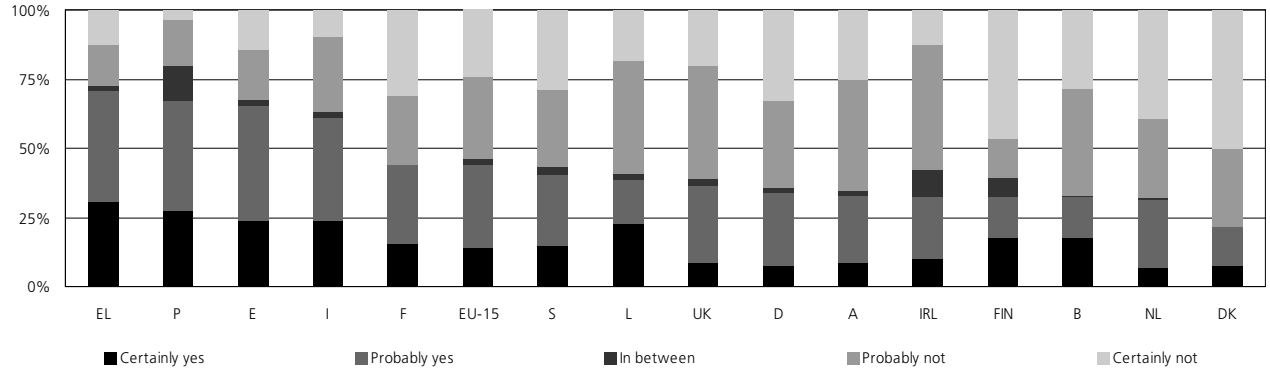
Figures 2.3.7 to 2.3.9 show the opinions of enterprises as to whether or not increased labour mobility would help them become more innovative. Well in excess of 50% of respondents in Greece, Spain, Italy and Portugal agreed with this question - with shares rising to at least 75% for large enterprises (except in Portugal). At the other end of the spectrum, enterprises in Denmark, Germany and Finland tended to be the least in agreement. Looking at the breakdown by size class, large enterprises conformed most to the idea that increased labour productivity would encourage more innovation. Some 57% of large enterprises in the EU agreed with this question; the corresponding shares for medium-sized and small enterprises were considerably lower (44% and 42% respectively).

Figure 2.3.7: Small enterprises: would greater mobility of highly qualified personnel aid your enterprise to become more innovative, May 2001 (% of replies) (1)



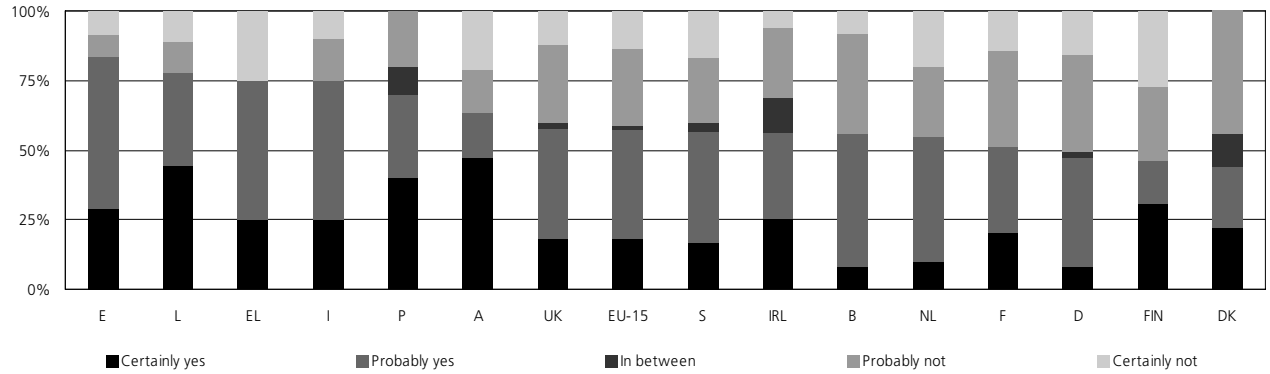
(1) Activity coverage is NACE Sections D, F, G, H, I, J and K. Percentage values reported exclude respondents that answered do not know and respondents who failed to answer; the figure is ranked according to positive answers (certainly yes and probably yes).
Source: Eurobarometer - Flash Eurobarometer 100

Figure 2.3.8: Medium-sized enterprises: would greater mobility of highly qualified personnel aid your enterprise to become more innovative, May 2001 (% of replies) (1)



(1) Activity coverage is NACE Sections D, F, G, H, I, J and K. Percentage values reported exclude respondents that answered do not know and respondents who failed to answer; the figure is ranked according to positive answers (certainly yes and probably yes).
Source: Eurobarometer - Flash Eurobarometer 100

Figure 2.3.9: Large enterprises: would greater mobility of highly qualified personnel aid your enterprise to become more innovative, May 2001 (% of replies) (1)



(1) Activity coverage is NACE Sections D, F, G, H, I, J and K. Percentage values reported exclude respondents that answered do not know and respondents who failed to answer; the figure is ranked according to positive answers (certainly yes and probably yes).
Source: Eurobarometer - Flash Eurobarometer 100

Aside from the problems of labour market flexibility, when asked how human resources and knowledge management could best contribute to innovation, the majority of enterprises replied that training existing staff was the best option available (cited by 78% of respondents). Among the five largest EU economies, as well as Luxembourg and Sweden, the proportion of small enterprises that considered training as the most important contributor to innovation was above the national average for all enterprises - see table 2.3.6[14].

There was considerably less concern among enterprises when asked what role protectionist strategies (such as applications to register patents or trademarks) played. Rather, the main concern of innovators in the EU was to maximise lead-time advantages over their competitors - see table 2.3.7. These trends were confirmed when enterprises were asked to name the two most important barriers that were holding back innovation in their enterprise. The protection of knowledge (intellectual property rights) was given as the least important reason, with the most limiting barriers being human resources and access to innovative customers; these findings are important in the context of the liberalisation of labour markets and the development of industrial clusters.

By taking the percentage point difference to the average results obtained for all enterprises, it is possible to show where relative differences between the size classes exist. Medium-sized enterprises in the EU were most concerned about a lack of finance as a limiting factor (28% compared to an average of 26%), whilst small enterprises were most concerned about a lack of human resources (49% compared to an average of 46%) - see table 2.3.8.

(14) Note that Continuing Vocational Training is covered in section 2.5 of this publication - see page 48.

Table 2.3.6: How can human resources and knowledge management best contribute to innovation in your enterprise, May 2001 (% of respondents - several answers possible) (1)

	EU-15	B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK
Hiring highly qualified personnel																
Small (20-49)	41	51	36	40	47	38	48	28	37	37	44	22	21	37	50	47
Medium (50-249)	33	35	24	32	41	35	34	28	29	23	29	23	30	32	48	39
Large (250+)	53	68	44	51	75	54	46	38	45	33	55	42	55	50	57	72
Average (20+)	39	44	28	39	45	37	41	29	32	31	37	24	30	39	50	48
Training existing staff																
Small (20-49)	80	70	76	86	67	77	76	56	83	67	51	76	64	78	85	79
Medium (50-249)	76	74	79	81	72	74	72	63	78	60	54	86	72	82	81	73
Large (250+)	78	84	78	86	75	79	77	75	75	78	50	68	45	81	87	78
Average (20+)	78	74	78	84	70	75	74	62	79	65	53	81	66	80	83	76
Advanced information / communication technologies																
Small (20-49)	41	29	36	49	39	46	21	26	46	20	30	35	6	33	14	46
Medium (50-249)	34	36	27	48	36	32	18	13	29	26	21	20	24	43	16	31
Large (250+)	47	36	56	57	50	58	37	25	35	11	40	21	9	38	30	66
Average (20+)	38	34	31	50	38	39	21	20	35	21	26	25	16	37	17	43
Encourage and support existing personnel																
Small (20-49)	55	49	66	73	33	39	35	23	38	41	66	43	33	35	44	55
Medium (50-249)	51	62	59	64	34	43	36	25	38	37	71	46	28	29	53	60
Large (250+)	52	52	78	65	25	46	43	44	30	56	50	47	18	42	43	66
Average (20+)	53	56	62	67	34	42	37	27	38	41	67	45	29	35	48	59

(1) Activity coverage is NACE Sections D, F, G, H, I, J and K. Percentage values reported in the table exclude respondents that answered do not know and respondents who failed to answer.
Source: Eurobarometer - Flash Eurobarometer 100

Table 2.3.7: Which knowledge protection strategy is most relevant to your enterprise, May 2001 (% of respondents - only one answer) (1)

	EU-15	B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK
Patenting																
Small (20-49)	14	13	8	15	11	25	12	8	13	21	13	13	17	7	13	9
Medium (50-249)	14	10	8	19	20	9	17	9	10	13	12	16	21	4	7	8
Large (250+)	16	22	22	18	:	17	17	25	5	13	11	22	:	8	22	18
Average (20+)	14	13	9	17	16	15	15	11	10	16	12	16	17	6	12	10
Register trademarks, designs																
Small (20-49)	14	19	12	14	54	17	12	23	4	18	18	22	21	19	13	18
Medium (50-249)	15	18	22	12	36	18	16	9	11	8	21	8	30	15	10	16
Large (250+)	12	13	44	8	50	13	11	6	5	:	21	22	40	35	30	8
Average (20+)	14	18	21	12	44	17	14	14	8	12	20	15	28	22	14	15
Lead-time advantage																
Small (20-49)	65	55	64	68	29	51	69	69	77	56	62	57	55	72	61	55
Medium (50-249)	61	62	50	65	36	59	54	80	70	74	59	62	30	69	70	58
Large (250+)	68	61	33	68	25	67	66	69	90	88	63	56	30	50	48	71
Average (20+)	63	59	53	67	33	57	61	73	73	67	61	59	38	65	63	59

(1) Activity coverage is NACE Sections D, F, G, H, I, J and K. Percentage values reported in the table exclude respondents that answered do not know and respondents who failed to answer.
Source: Eurobarometer - Flash Eurobarometer 100

Table 2.3.8: What are the two most important barriers holding back innovation in your enterprise, May 2001 (% of respondents - several answers possible) (1)

	EU-15	B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK
Ability to use new technologies																
Small (20-49)	34	36	20	36	31	28	32	40	29	18	49	30	42	43	18	31
Medium (50-249)	34	34	21	40	39	17	34	38	34	18	45	33	16	33	15	40
Large (250+)	36	45	33	43	50	38	34	44	25	13	32	42	30	44	28	33
Average (20+)	34	36	21	39	36	23	33	40	31	18	45	33	27	41	18	35
Human resources																
Small (20-49)	49	36	41	51	47	36	54	51	37	71	23	49	36	57	64	60
Medium (50-249)	44	36	34	48	47	40	41	59	41	55	19	40	33	37	54	54
Large (250+)	46	55	44	41	25	46	49	63	30	75	58	53	50	40	66	57
Average (20+)	46	39	37	48	46	39	47	56	39	64	24	45	36	47	59	57
Financial resources																
Small (20-49)	24	24	16	23	39	28	18	19	19	20	13	25	30	11	20	35
Medium (50-249)	28	16	16	30	40	33	23	13	19	9	19	25	47	26	10	39
Large (250+)	22	27	22	16	25	33	31	6	30	25	11	11	40	4	7	18
Average (20+)	26	20	16	25	39	31	22	14	20	15	16	24	41	13	13	34
Protecting knowledge																
Small (20-49)	12	24	11	12	6	6	9	14	6	7	17	19	:	2	11	24
Medium (50-249)	10	16	17	10	4	7	9	18	7	14	18	24	9	:	6	16
Large (250+)	12	9	:	12	:	13	:	13	20	25	11	26	10	8	14	22
Average (20+)	11	18	15	11	4	7	8	15	7	11	17	22	6	3	9	20
Finding partners for knowledge sharing / networking																
Small (20-49)	19	16	14	15	17	22	20	9	21	22	38	17	21	26	24	19
Medium (50-249)	18	24	12	14	14	18	14	18	21	16	42	22	24	41	32	17
Large (250+)	21	5	11	25	25	25	14	13	20	:	37	:	10	44	10	27
Average (20+)	19	19	12	16	15	20	17	13	21	18	40	18	21	35	26	20
Access to innovative customers																
Small (20-49)	40	38	30	44	19	32	34	44	50	29	48	45	39	35	24	29
Medium (50-249)	38	42	34	36	16	31	43	21	51	43	45	43	44	41	32	29
Large (250+)	39	23	22	35	50	17	49	44	50	25	53	21	40	36	28	43
Average (20+)	39	39	33	39	19	30	40	35	50	35	47	42	42	37	28	32

(1) Activity coverage is NACE Sections D, F, G, H, I, J and K. Percentage values reported in the table exclude respondents that answered do not know and respondents who failed to answer.
Source: Eurobarometer - Flash Eurobarometer 100

2.4: SMEs AND THE INFORMATION SOCIETY

An important and common characteristic that links many of the fastest growing, developed world economies is their use of information and communication technologies (ICT). These technologies have diffused across a range of economic activities and as a result, ICT is considered one of the key drivers of growth and productivity. Indeed, the Enterprise Directorate-General's Competitiveness Report in 2001[15] showed that the number of PCs per inhabitant and the number of Internet hosts in a country were positively and significantly correlated to productivity growth. This section concentrates in particular upon the take-up of e-commerce by enterprises and the use they make of the Internet.

(15) The European Competitiveness Report 2001, SEC (2001) 1705, 29 October; for more information, please consult: *http://www.europa.eu.int/comm/enterprise/library/lib-competitiveness/libr-competitiveness.html*

E-COMMERCE PILOT SURVEY

According to Eurostat's pilot survey on e-commerce, as many as 16% of small enterprises in Greece did not use a PC in 2001; at the other end of the range, only 3% of small enterprises in Finland did not use a PC - see table 2.4.1. SMEs may well be catching up larger enterprises as regards ICT equipment rates, however, there remains a clear size-class effect, which is most noticeable for small enterprises that tend to report much lower equipment rates than either medium-sized or large enterprises. Indeed, the difference between the proportion of small and large enterprises that were using PCs was consistently in favour of large enterprises and rose to at least ten percentage points difference in five of the Member States (Greece, Spain, Italy and Portugal, as well as Luxembourg). Practically all large enterprises used PCs in eight of the Member States surveyed.

Between 49% (Greece) and 90% (Finland) of small enterprises had web access in 2001. Again the share of small enterprises that had web access was below the corresponding proportions recorded by large enterprises in every country surveyed; with the difference in excess of ten percentage points, except in Finland (7 percentage points). Large enterprises were far more likely to have invested in a broadband or xDSL connection than medium-sized or small enterprises, probably due to the relatively high fixed costs of setting-up this type of infrastructure - see table 2.4.2.

Table 2.4.1: Equipment rates in the manufacturing and service sectors, 2001 (%) (1)

	B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK	NO
Use computers (2)																
Small (10-49)	:	94	94	84	90	:	:	85	89	93	91	88	97	96	90	92
Medium (50-249)	:	100	97	96	96	:	:	95	99	:	99	97	99	100	99	98
Large (250+)	:	100	96	98	100	:	:	99	99	:	100	99	100	100	100	99
Average	:	95	96	85	91	:	:	86	91	93	92	89	98	97	92	93
Use Intranet																
Small (10-49)	:	25	34	19	28	:	:	18	18	74	21	27	20	36	23	18
Medium (50-249)	:	43	56	48	49	:	:	41	37	:	50	38	47	63	39	37
Large (250+)	:	68	57	64	72	:	:	68	42	:	67	58	74	78	61	61
Average	:	29	44	22	31	:	:	21	22	77	27	28	26	41	27	21
Use EDI																
Small (10-49)	:	16	17	4	2	:	:	4	13	49	11	20	13	13	11	16
Medium (50-249)	:	30	32	13	12	:	:	12	27	:	30	26	26	22	26	28
Large (250+)	:	61	41	16	38	:	:	31	36	:	49	38	52	48	46	43
Average	:	19	25	5	4	:	:	5	17	52	15	20	16	15	15	18
Have Web access																
Small (10-49)	:	85	77	49	63	:	:	63	52	77	73	71	90	88	59	71
Medium (50-249)	:	96	90	70	89	:	:	86	63	:	91	88	96	96	79	87
Large (250+)	:	99	89	84	97	:	:	94	70	:	91	94	97	99	90	94
Average	:	87	83	51	67	:	:	66	55	79	76	72	91	90	63	73
Have own Web site																
Small (10-49)	:	59	57	27	5	:	:	8	36	43	49	30	55	64	45	43
Medium (50-249)	:	80	78	52	13	:	:	14	57	:	76	44	79	83	69	69
Large (250+)	:	89	86	54	35	:	:	22	67	:	86	59	93	91	80	79
Average	:	63	67	29	7	:	:	9	41	47	54	30	60	68	50	47
Have third party Web site																
Small (10-49)	:	:	23	8	27	:	:	24	12	:	25	2	:	:	11	:
Medium (50-249)	:	:	19	14	39	:	:	42	14	:	30	5	:	:	13	:
Large (250+)	:	:	17	14	47	:	:	43	11	:	30	3	:	:	16	:
Average	:	:	21	8	29	:	:	26	13	:	26	2	:	:	11	:

(1) Activity coverage is NACE Sections D and G to K. (2) 2000.
Source: Eurostat - E-commerce database

Table 2.4.2: Internet access means in the manufacturing and service sectors, 2001 (%) (1)

	B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK	NO
Use Internet via mobile phone																
Small (10-49)	:	:	9	2	1	:	:	2	3	:	7	5	8	:	3	:
Medium (50-249)	:	:	15	2	5	:	:	3	4	:	11	7	18	:	5	:
Large (250+)	:	:	19	5	13	:	:	5	6	:	18	10	32	:	9	:
Average	:	:	12	2	2	:	:	2	4	:	8	5	10	:	3	:
Use Internet via analogue modem																
Small (10-49)	:	:	12	38	39	:	:	34	14	:	23	42	40	:	48	:
Medium (50-249)	:	:	16	42	44	:	:	33	18	:	22	48	32	:	39	:
Large (250+)	:	:	30	42	44	:	:	33	22	:	19	43	44	:	33	:
Average	:	:	15	38	39	:	:	34	15	:	23	42	39	:	46	:
Use Internet via ISDN																
Small (10-49)	:	:	61	28	30	:	:	41	36	:	57	25	51	:	28	:
Medium (50-249)	:	:	73	44	55	:	:	56	42	:	74	39	49	:	53	:
Large (250+)	:	:	70	48	69	:	:	47	38	:	69	50	53	:	55	:
Average	:	:	67	29	33	:	:	42	37	:	60	25	50	:	32	:
Use Internet via xDSL																
Small (10-49)	:	:	7	1	6	:	:	8	2	:	9	6	15	:	3	:
Medium (50-249)	:	:	11	5	11	:	:	21	2	:	14	9	26	:	4	:
Large (250+)	:	:	19	7	17	:	:	44	3	:	16	12	34	:	7	:
Average	:	:	9	1	6	:	:	9	2	:	10	6	18	:	3	:
Use Internet via other broadband connection (> 2 Mbps)																
Small (10-49)	:	:	4	2	1	:	:	2	12	:	6	11	11	:	3	:
Medium (50-249)	:	:	16	7	7	:	:	6	32	:	15	16	35	:	11	:
Large (250+)	:	:	28	16	25	:	:	18	62	:	33	24	65	:	31	:
Average	:	:	10	3	2	:	:	2	18	:	8	11	17	:	5	:

(1) Activity coverage is NACE Sections D and G to K.
Source: Eurostat - E-commerce database

However, when small enterprises do adopt ICT, it would appear that they rely on it as much as larger enterprises. Tables 2.4.3 to 2.4.6 (which are shown overleaf) provide information that supports the view that whilst a lower proportion of small enterprises made e-purchases and e-sales in 2001, those that did were often more likely to use it for a greater share of their purchases/sales than larger enterprises. These figures suggest that once SMEs have become aware of the possibilities offered by ICT and have managed to install the necessary infrastructure, they are somewhat more disposed than larger enterprises to use and benefit from the technologies introduced. Hence, the major problem to be overcome would appear to be the introduction of new technologies into SMEs, not their use once operational.

Table 2.4.3: Use of e-commerce and B2B marketplaces in the manufacturing and service sectors, 2001 (%) (1)

	B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK	NO
Use e-commerce to make purchases																
Small (10-49)	:	33	32	5	8	:	:	9	17	38	13	11	33	30	31	32
Medium (50-249)	:	50	40	10	16	:	:	16	26	:	20	15	42	36	39	51
Large (250+)	:	66	51	8	20	:	:	21	28	:	30	21	45	37	50	72
Average	:	37	37	5	9	:	:	10	19	40	15	11	35	31	33	36
Make purchases through specialised B2B Internet marketplaces																
Small (10-49)	:	9	6	3	1	:	:	0	6	4	2	2	9	15	7	9
Medium (50-249)	:	14	7	5	3	:	:	1	8	:	4	3	13	19	9	16
Large (250+)	:	15	6	4	4	:	:	3	9	:	7	5	22	32	12	25
Average	:	9	6	3	1	:	:	0	6	4	3	3	10	16	8	10
Share of e-purchasers using B2B Internet marketplaces																
Small (10-49)	:	25	19	50	12	:	:	3	35	:	18	22	29	50	24	26
Medium (50-249)	:	27	16	50	16	:	:	6	32	:	21	21	30	54	24	32
Large (250+)	:	22	13	50	19	:	:	13	33	:	23	23	49	86	23	35
Average	:	26	17	50	13	:	:	4	34	:	19	22	30	52	24	28
Use e-commerce to make sales																
Small (10-49)	:	26	23	6	5	:	:	3	7	36	11	6	13	10	15	10
Medium (50-249)	:	32	36	14	8	:	:	4	13	:	16	10	17	14	20	13
Large (250+)	:	46	48	13	24	:	:	8	27	:	26	19	26	19	35	27
Average	:	28	30	6	6	:	:	3	9	36	12	6	14	11	16	10
Make sales through specialised B2B Internet marketplaces																
Small (10-49)	:	2	6	1	0	:	:	0	2	2	2	1	:	2	4	2
Medium (50-249)	:	3	8	4	1	:	:	0	5	:	3	2	:	4	6	2
Large (250+)	:	4	11	4	4	:	:	1	10	:	4	3	:	8	11	8
Average	:	2	7	2	0	:	:	0	3	3	2	1	:	2	4	2
Share of e-sellers using B2B Internet marketplaces																
Small (10-49)	:	6	27	25	5	:	:	7	32	:	17	10	:	15	25	21
Medium (50-249)	:	10	23	32	9	:	:	9	44	:	21	20	:	31	28	17
Large (250+)	:	8	22	35	15	:	:	11	37	:	16	16	:	44	30	29
Average	:	7	25	26	7	:	:	7	35	:	18	11	:	20	26	21

(1) Activity coverage is NACE Sections D and G to K.
Source: Eurostat - E-commerce database

Table 2.4.4: Type of Internet e-commerce in the manufacturing and service sector, 2001 (%) (1)

	B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK	NO
E-purchasing via Internet: ordering																
Small (10-49)	:	31	27	5	8	:	:	7	16	38	12	9	33	51	:	32
Medium (50-249)	:	47	32	10	15	:	:	13	24	:	19	14	42	63	:	51
Large (250+)	:	62	40	6	16	:	:	17	25	:	25	16	45	71	:	72
Average	:	34	30	5	9	:	:	8	18	40	14	10	35	54	:	36
E-purchasing via Internet: payment																
Small (10-49)	:	15	9	1	3	:	:	4	7	15	5	4	9	48	:	14
Medium (50-249)	:	25	7	2	6	:	:	7	13	:	8	4	11	50	:	19
Large (250+)	:	37	7	3	8	:	:	9	14	:	7	6	12	34	:	30
Average	:	17	8	1	3	:	:	5	8	16	5	4	10	48	:	15
E-purchasing via Internet: electronic delivery																
Small (10-49)	:	44	6	1	3	:	:	3	5	15	3	2	42	61	:	:
Medium (50-249)	:	56	6	2	7	:	:	6	9	:	7	2	57	81	:	:
Large (250+)	:	73	4	1	9	:	:	8	11	:	6	5	74	87	:	:
Average	:	47	6	1	4	:	:	4	6	16	3	2	46	64	:	:
E-sales via Internet: product information																
Small (10-49)	:	:	21	5	4	:	:	2	7	43	10	5	26	:	:	40
Medium (50-249)	:	:	31	12	7	:	:	2	8	:	14	7	38	:	:	66
Large (250+)	:	:	41	10	17	:	:	6	26	:	22	12	50	:	:	76
Average	:	:	26	6	5	:	:	2	8	46	11	5	29	:	:	44
E-sales via Internet: price information																
Small (10-49)	:	:	17	5	3	:	:	1	3	21	9	4	26	:	:	:
Medium (50-249)	:	:	25	10	6	:	:	2	7	:	12	6	38	:	:	:
Large (250+)	:	:	33	9	14	:	:	5	15	:	18	10	50	:	:	:
Average	:	:	21	5	4	:	:	1	4	21	9	4	29	:	:	:
E-sales via Internet: taking orders																
Small (10-49)	:	24	17	4	4	:	:	2	5	36	10	3	13	16	:	16
Medium (50-249)	:	23	25	10	6	:	:	3	10	:	14	6	17	25	:	24
Large (250+)	:	29	37	9	11	:	:	5	22	:	20	9	26	26	:	27
Average	:	24	22	5	4	:	:	2	7	36	11	4	14	17	:	17
E-sales via Internet: payment																
Small (10-49)	:	7	5	1	1	:	:	1	1	9	2	1	:	3	:	4
Medium (50-249)	:	7	5	3	1	:	:	1	5	:	4	2	:	5	:	4
Large (250+)	:	7	4	4	6	:	:	2	12	:	7	4	:	8	:	5
Average	:	7	5	1	1	:	:	1	2	9	2	1	2	4	:	4
E-sales via Internet: electronic delivery																
Small (10-49)	:	6	2	1	1	:	:	0	1	10	1	1	:	4	:	4
Medium (50-249)	:	9	2	2	0	:	:	0	2	:	2	1	:	5	:	7
Large (250+)	:	13	3	3	7	:	:	1	10	:	4	1	:	7	:	11
Average	:	7	2	1	1	:	:	0	2	10	1	1	:	4	:	4

(1) Activity coverage is NACE Sections D and G to K.
Source: Eurostat - E-commerce database

Table 2.4.5: Extent of e-purchasing in the manufacturing and service sector, 2001 (%) (1)

	B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK	NO
Use e-commerce to make purchases																
Small (10-49)	:	33	32	5	8	:	:	9	17	38	13	11	33	30	31	32
Medium (50-249)	:	50	40	10	16	:	:	16	26	:	20	15	42	36	39	51
Large (250+)	:	66	51	8	20	:	:	21	28	:	30	21	45	37	50	72
Average	:	37	37	5	9	:	:	10	19	40	15	11	35	31	33	36
Proportion of enterprises making e-purchases that used it for 1% or more of all purchases																
Small (10-49)	:	:	83	95	72	:	:	71	84	:	77	82	:	:	60	:
Medium (50-249)	:	:	79	78	52	:	:	71	85	:	63	76	:	:	61	:
Large (250+)	:	:	73	92	54	:	:	67	84	:	58	71	:	:	61	:
Average	:	:	80	92	67	:	:	71	84	:	73	82	:	:	61	:
Proportion of enterprises making e-purchases that used it for 10% or more of all purchases																
Small (10-49)	:	:	22	51	33	:	:	21	29	:	28	34	:	:	22	:
Medium (50-249)	:	:	13	47	25	:	:	12	21	:	22	23	:	:	17	:
Large (250+)	:	:	6	58	27	:	:	15	26	:	30	16	:	:	23	:
Average	:	:	16	51	31	:	:	20	27	:	27	33	:	:	21	:
Proportion of enterprises making e-purchases that used it for 50% or more of all purchases																
Small (10-49)	:	:	1	14	6	:	:	3	10	:	9	16	:	:	9	:
Medium (50-249)	:	:	1	16	7	:	:	1	7	:	9	8	:	:	6	:
Large (250+)	:	:	0	17	10	:	:	2	12	:	5	8	:	:	8	:
Average	:	:	1	14	6	:	:	3	9	:	9	16	:	:	8	:

(1) Activity coverage is NACE Sections D and G to K.
Source: Eurostat - E-commerce database

Table 2.4.6: Extent of e-sales in the manufacturing and service sector, 2001 (%) (1)

	B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK	NO
Use e-commerce to make sales																
Small (10-49)	:	26	23	6	5	:	:	3	7	36	11	6	13	10	15	10
Medium (50-249)	:	32	36	14	8	:	:	4	13	:	16	10	17	14	20	13
Large (250+)	:	46	48	13	24	:	:	8	27	:	26	19	26	19	35	27
Average	:	28	30	6	6	:	:	3	9	36	12	6	14	11	16	10
Proportion of enterprises making e-sales that used it for 1% or more of all sales																
Small (10-49)	:	:	52	74	28	:	:	85	80	:	62	70	:	:	56	:
Medium (50-249)	:	:	52	65	53	:	:	90	73	:	55	69	:	:	58	:
Large (250+)	:	:	49	50	66	:	:	74	73	:	56	61	:	:	61	:
Average	:	:	52	72	36	:	:	85	77	:	60	70	:	:	57	:
Proportion of enterprises making e-sales that used it for 10% or more of all sales																
Small (10-49)	:	:	14	32	15	:	:	51	20	:	23	28	:	:	19	:
Medium (50-249)	:	:	5	30	20	:	:	48	14	:	23	33	:	:	27	:
Large (250+)	:	:	4	25	32	:	:	46	20	:	24	25	:	:	34	:
Average	:	:	9	32	17	:	:	50	19	:	23	28	:	:	22	:
Proportion of enterprises making e-sales that used it for 50% or more of all sales																
Small (10-49)	:	:	1	13	8	:	:	5	0	:	4	11	:	:	5	:
Medium (50-249)	:	:	0	15	3	:	:	7	0	:	6	5	:	:	12	:
Large (250+)	:	:	0	5	16	:	:	9	0	:	10	7	:	:	15	:
Average	:	:	0	13	8	:	:	6	0	:	5	10	:	:	7	:

(1) Activity coverage is NACE Sections D and G to K.
Source: Eurostat - E-commerce database

FLASH EUROBAROMETER ON INTERNET USE

A Flash Eurobarometer survey on the use of the Internet and economic development of SMEs was conducted on behalf of the Information Society Directorate-General between 10 and 23 March 2000. The data need to be interpreted with care as the sample was drawn from a set of key activities that were identified as being of particular importance for Internet development.

The survey is however of particular interest as it includes micro-sized enterprises with between 1 and 9 employees; an enterprise size class that was not covered by the e-commerce pilot survey. In addition, the Eurobarometer survey addresses a number of key questions that may explain why the take-up of ICT is lower in micro and small enterprises.

One reason they may use less ICT is that they are less likely to instigate studies on different ways to expand their business, and as a result they are unaware of the possibilities offered by new technologies. This lack of information on the part of micro-enterprises was borne out when enterprises were asked if they were aware of the potential of the Internet - see table 2.4.7 (below). The vast majority of respondents who were not at all informed were micro enterprises, some 16% of them in the manufacturing sector and 12% of those in the service sector, compared to just 1% and 3% of medium-sized enterprises. Micro enterprises were the least informed enterprise size class in all but three Member States (the Netherlands, Portugal and Finland) in the manufacturing sector, and all but two (Spain and Austria) in the service sector.

The main uses of the Internet among SMEs in the EU include researching information on markets and competition (79%), advertising or promoting products or services (51%) and collaborating from a distance on projects with other companies (44%) - see table 2.4.8.

Table 2.4.7: How well informed is your enterprise about the potential of the Internet (% of respondents - scale 0-10; 0 = not at all informed; 10 = perfectly informed) (1)

	EU-15	B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK
ANSWER: ZERO																
MANUFACTURING																
Micro (1-9)	16	19	17	6	27	24	22	26	5	56	22	11	33	9	:	13
Small (10-49)	5	3	6	3	19	17	:	:	2	13	43	10	36	:	:	6
Medium (50-249)	1	:	:	:	:	:	:	:	:	:	20	:	10	20	:	:
Average (1-249)	11	14	13	4	23	21	19	11	3	32	25	9	31	8	:	9
SERVICES																
Micro (1-9)	12	13	2	4	20	15	28	5	7	13	10	6	20	8	21	9
Small (10-49)	3	5	2	:	10	:	4	2	:	5	9	:	12	:	:	8
Medium (50-249)	3	:	:	:	7	25	14	:	:	:	:	10	:	:	:	:
Average (1-249)	10	12	2	2	17	12	25	3	5	10	10	5	19	7	16	8
ANSWER: 10																
MANUFACTURING																
Micro (1-9)	6	5	4	10	4	8	3	11	5	:	4	14	2	7	24	12
Small (10-49)	13	10	6	23	11	8	8	4	6	13	:	10	9	:	11	17
Medium (50-249)	5	:	18	:	:	50	:	:	9	:	:	20	:	:	:	:
Average (1-249)	8	6	5	14	5	12	3	6	6	4	3	14	4	6	19	12
SERVICES																
Micro (1-9)	11	7	11	15	3	8	8	15	8	7	12	17	7	6	6	18
Small (10-49)	11	8	24	13	10	8	9	12	10	10	9	29	4	14	9	10
Medium (50-249)	26	15	40	47	7	13	:	35	10	17	14	30	:	:	13	13
Average (1-249)	12	7	14	17	5	8	8	16	9	8	12	20	6	7	6	16

(1) Activity coverage is NACE Section D for manufacturing and NACE Sections G, H, I, J and K for services. Answers 1-9 not given in the published table - please refer to the Flash Eurobarometer report for further details.
Source: Eurobarometer - Flash Eurobarometer 78

Table 2.4.8: Use of the Internet by the manufacturing and service sector, March 2000 (% of respondents - several answers possible) (1)

	EU-15	B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK
Advertising / promoting of products / services																
Micro (1-9)	46	37	57	46	37	31	44	42	46	50	45	53	30	53	43	58
Small (10-49)	57	45	61	58	31	51	58	49	53	56	51	62	15	73	67	69
Medium (50-249)	70	55	86	75	52	62	63	50	65	66	49	68	30	90	69	78
Average (1-249)	51	39	59	53	37	38	47	46	50	53	46	56	28	57	51	63
Selling directly to other companies																
Micro (1-9)	26	28	24	25	18	22	33	20	19	29	23	27	27	18	21	32
Small (10-49)	30	26	19	33	20	30	26	32	22	27	24	25	:	25	28	44
Medium (50-249)	28	35	43	31	19	38	21	31	15	33	14	11	10	50	31	40
Average (1-249)	27	28	24	28	19	25	31	26	20	29	23	25	20	20	23	36
Selling directly to the consumers																
Micro (1-9)	23	17	29	36	13	15	16	17	15	28	12	28	25	19	24	32
Small (10-49)	29	12	28	41	19	22	26	28	20	28	14	27	5	39	30	28
Medium (50-249)	31	15	43	34	29	31	21	20	26	28	7	26	10	30	27	40
Average (1-249)	26	16	29	37	16	18	18	22	18	28	12	27	20	21	26	32
Collaborating, from a distance, on a specific project with other companies, far away or abroad																
Micro (1-9)	42	36	38	46	41	31	46	40	39	49	37	47	35	47	40	47
Small (10-49)	47	38	39	45	44	32	58	56	45	52	27	53	10	46	38	64
Medium (50-249)	47	48	43	44	48	38	42	43	50	49	39	58	10	80	64	58
Average (1-249)	44	37	38	45	42	32	47	47	42	50	36	49	29	49	41	53
Providing after-sales services to clients																
Micro (1-9)	30	25	29	39	21	22	19	30	32	41	25	32	32	24	40	34
Small (10-49)	35	29	28	36	16	28	17	39	41	37	25	29	20	25	42	44
Medium (50-249)	41	51	49	46	15	12	35	32	30	23	39	42	30	50	52	52
Average (1-249)	32	27	29	39	19	23	20	34	35	38	26	32	30	25	41	38
Managing orders and invoicing with suppliers																
Micro (1-9)	24	20	29	17	21	34	16	26	28	29	20	41	27	33	30	26
Small (10-49)	21	9	23	11	14	30	35	23	20	40	25	45	20	46	32	24
Medium (50-249)	25	22	15	25	15	19	21	25	26	24	10	42	10	30	27	33
Average (1-249)	23	18	27	16	19	32	20	25	25	32	20	42	24	35	31	26
Answering public calls for tender																
Micro (1-9)	11	8	15	7	11	8	6	21	6	49	5	18	10	18	23	22
Small (10-49)	16	11	7	10	6	19	8	27	13	44	7	18	:	29	19	37
Medium (50-249)	18	4	10	9	10	25	13	19	10	28	7	42	10	:	21	45
Average (1-249)	13	8	13	8	10	12	7	23	8	45	6	20	8	18	22	29
Communicating with local administrations and national authorities																
Micro (1-9)	25	24	40	20	14	31	19	33	26	24	18	32	27	40	36	29
Small (10-49)	31	31	54	21	10	49	26	39	33	27	20	53	10	46	43	37
Medium (50-249)	36	39	85	31	20	75	13	38	56	38	27	53	20	50	73	24
Average (1-249)	27	26	45	22	14	38	20	36	31	27	18	39	23	41	40	31
Managing financial accounts																
Micro (1-9)	26	37	28	30	14	44	18	10	28	20	19	27	19	11	44	13
Small (10-49)	28	35	26	34	9	49	23	11	17	18	15	35	20	13	42	19
Medium (50-249)	27	29	29	38	15	38	:	16	30	34	:	32	20	10	31	14
Average (1-249)	26	36	28	32	13	45	18	11	25	21	18	29	19	12	43	15
Publishing vacancies and recruiting collaborators																
Micro (1-9)	13	10	18	17	9	8	10	11	13	21	18	19	11	44	12	8
Small (10-49)	24	26	35	39	2	7	12	28	11	30	30	22	5	55	31	23
Medium (50-249)	35	55	57	53	5	6	27	43	5	42	31	63	10	60	64	28
Average (1-249)	18	15	23	28	6	8	11	22	12	26	20	23	10	46	20	14
Allowing staff to work from a distance																
Micro (1-9)	19	15	19	22	6	13	25	24	14	26	22	19	29	24	15	19
Small (10-49)	26	29	31	26	8	27	35	29	8	36	22	38	5	37	27	39
Medium (50-249)	29	48	52	25	5	:	29	31	36	33	14	58	10	50	61	39
Average (1-249)	22	19	23	24	6	16	26	27	14	29	22	27	23	26	20	26
Researching information on markets and competition																
Micro (1-9)	77	77	64	87	47	72	72	79	84	75	79	74	71	75	72	70
Small (10-49)	81	78	80	84	52	85	67	78	86	81	75	71	60	63	89	79
Medium (50-249)	89	100	95	97	38	69	65	96	85	76	100	89	50	90	82	96
Average (1-249)	79	78	69	87	47	76	71	81	85	77	79	75	67	75	77	75

(1) Activity coverage is NACE Sections D, G, H, I, J and K.
Source: Eurobarometer - Flash Eurobarometer 78

Among enterprises that chose not to use the Internet, there was no particular reason that stood out as being considerably more important than another - see table 2.4.9 (overleaf). Size issues, such as the enterprise or local market being too small, were the most common reasons for not using the Internet among micro enterprises, while for medium-sized enterprises the most important reason was that the Internet did not fit their type of activity (24%). This figure suggests that medium-sized enterprises were more aware of the Internet's potential but had taken a conscious decision not to use it.

When asked if there were any organisations or bodies that they could turn to in order to set-up and use the Internet, the most popular answer given was private consultants; cited by 40% of SMEs in the EU - see table 2.4.10 (also overleaf). The only other answer that was cited by more than one-third of respondents was Chambers of Commerce, which were particularly favoured by micro and small enterprises.

Table 2.4.9: Reasons for not using the Internet in the manufacturing and service sector, March 2000 (% of respondents - several answers possible) (1)

	EU-15	B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK
Enterprise is too small																
Micro (1-9)	20	22	11	22	22	21	18	20	19	24	18	18	35	29	15	21
Small (10-49)	9	4	3	5	9	10	:	7	10	10	6	9	33	12	6	12
Medium (50-249)	4	:	:	:	8	:	:	6	11	16	:	:	17	:	:	:
Average (1-249)	18	20	10	17	19	19	17	15	16	21	17	17	34	28	14	18
Market is purely local																
Micro (1-9)	18	17	9	22	19	19	21	15	16	16	10	7	17	17	14	18
Small (10-49)	16	24	3	23	23	9	30	24	10	11	6	4	15	24	5	9
Medium (50-249)	9	:	:	:	15	:	21	21	:	16	27	:	17	:	:	22
Average (1-249)	17	18	8	22	20	17	22	18	14	15	10	6	16	17	13	16
Does not fit the enterprise's type of activities																
Micro (1-9)	16	18	23	16	21	12	14	22	22	9	20	5	8	20	8	19
Small (10-49)	19	25	31	23	21	23	:	15	21	4	31	:	6	:	6	19
Medium (50-249)	24	100	50	39	8	50	:	6	22	16	54	:	8	:	:	28
Average (1-249)	17	20	24	19	20	14	13	19	22	8	22	4	7	19	7	19
Does not interest the enterprise																
Micro (1-9)	10	10	11	2	33	10	10	3	19	12	12	11	9	7	9	7
Small (10-49)	11	5	3	5	36	2	6	4	15	12	8	9	16	12	:	17
Medium (50-249)	6	:	:	:	40	50	:	:	11	16	:	:	:	:	:	:
Average (1-249)	10	9	10	3	34	9	10	3	18	12	11	10	10	7	8	9
Other reasons / do not know / no answer																
Micro (1-9)	35	33	46	37	:	38	36	41	25	39	40	59	32	28	54	36
Small (10-49)	45	41	:	:	10	:	:	50	:	63	:	78	30	:	83	:
Medium (50-249)	56	:	:	:	:	:	:	68	:	:	:	100	58	:	:	:
Average (1-249)	37	33	47	40	8	40	39	45	30	44	40	62	33	29	58	38

(1) Activity coverage is NACE Sections D, G, H, I, J and K.
Source: Eurobarometer - Flash Eurobarometer 78

Table 2.4.10: Organisations/bodies that could help/encourage enterprises in the manufacturing and service sector to set-up and use the Internet, March 2000 (% of respondents - several answers possible) (1)

	EU-15	B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK
Press and media																
Micro (1-9)	16	26	5	34	10	27	5	15	5	7	8	12	19	2	2	22
Small (10-49)	19	35	8	26	8	34	:	6	3	:	8	17	11	12	:	33
Medium (50-249)	17	:	:	21	8	50	21	6	11	:	:	:	17	:	:	22
Average (1-249)	17	26	5	31	9	28	5	11	5	5	7	13	17	3	2	25
Chambers of commerce																
Micro (1-9)	36	43	3	50	36	53	46	20	19	31	27	22	22	7	1	29
Small (10-49)	34	46	:	44	33	63	19	15	18	32	31	30	26	:	:	37
Medium (50-249)	15	22	:	21	52	50	42	6	:	33	27	25	8	:	:	:
Average (1-249)	35	43	3	47	36	54	44	18	18	31	27	23	22	7	1	30
Governmental bodies																
Micro (1-9)	16	25	3	14	10	42	6	20	7	9	12	3	15	4	2	23
Small (10-49)	18	23	:	13	14	50	:	18	8	2	3	4	11	24	:	34
Medium (50-249)	8	78	:	:	:	:	21	6	:	:	:	:	8	:	:	22
Average (1-249)	16	25	2	13	11	43	5	19	7	7	11	3	14	5	2	25
Banks																
Micro (1-9)	23	40	14	35	18	41	6	23	17	10	12	6	27	12	10	30
Small (10-49)	28	57	:	33	11	62	6	24	23	10	14	9	23	24	:	26
Medium (50-249)	19	22	:	39	16	50	:	11	23	:	27	:	8	:	:	:
Average (1-249)	24	42	12	35	16	44	6	23	19	9	12	6	26	12	9	28
Professional associations																
Micro (1-9)	28	48	14	39	13	45	19	39	11	22	17	16	21	6	19	40
Small (10-49)	39	48	23	51	11	47	19	24	33	29	25	13	28	24	13	48
Medium (50-249)	24	100	:	19	:	50	:	26	23	:	:	25	25	:	:	50
Average (1-249)	30	48	15	42	12	46	18	34	17	22	18	16	22	7	18	42
Educational institutions																
Micro (1-9)	19	24	15	32	8	32	8	22	2	9	9	5	7	16	3	35
Small (10-49)	22	34	13	38	4	30	6	20	10	7	11	4	4	51	:	25
Medium (50-249)	11	22	:	21	15	:	:	21	:	:	27	:	:	:	:	22
Average (1-249)	19	25	15	33	8	32	8	21	4	8	10	5	6	18	3	32
Private consultants																
Micro (1-9)	40	48	51	68	28	34	36	52	29	21	33	33	11	24	14	48
Small (10-49)	38	58	43	62	29	27	42	67	26	32	42	9	4	27	17	32
Medium (50-249)	46	100	100	39	8	50	100	89	45	18	81	:	17	:	:	36
Average (1-249)	40	50	50	65	27	33	38	59	29	23	35	29	10	24	15	45
None of the above, but other answer																
Micro (1-9)	1	2	7	:	:	2	2	3	:	1	3	1	1	18	1	:
Small (10-49)	2	3	5	:	:	:	6	11	:	6	3	4	:	12	:	5
Medium (50-249)	3	:	:	:	:	:	:	:	11	16	:	:	:	:	:	:
Average (1-249)	1	2	6	:	:	1	2	5	0	2	3	2	1	17	1	1
None																
Micro (1-9)	6	6	9	:	8	5	11	3	3	8	9	4	17	10	1	6
Small (10-49)	6	8	18	:	7	9	21	4	5	5	6	:	22	24	:	5
Medium (50-249)	6	:	:	:	:	50	:	6	11	16	:	:	33	:	:	:
Average (1-249)	6	6	10	:	7	5	11	3	4	8	9	3	18	11	1	6

(1) Activity coverage is NACE Sections D, G, H, I, J and K.
Source: Eurobarometer - Flash Eurobarometer 78

FLASH EUROBAROMETER ON E-COMMERCE AND INTERNET SECURITY

A Flash Eurobarometer survey on e-commerce was conducted on behalf of the Economic and Financial Affairs Directorate-General between 27 November and 17 December 2001. It provides an indication of more recent trends in this field. One of the most important issues treated by the survey was that of Internet security. Interestingly, large enterprises appear to encounter a higher number of security problems than SMEs. This may be due to the fact that larger enterprises are more likely to have specialised IT staff and they are perhaps therefore more aware of security breaches that actually take place. Alternatively, the higher figure may be because larger enterprises are more recognisable targets, which provide more satisfaction and recognition for hackers. Large enterprises recorded the highest proportion of problems for each of the different security breaches identified in table 2.4.11.

Perhaps unsurprisingly, when asked if they had taken specific measures to protect against Internet security threats, large enterprises also accounted for the highest proportion of respondents. For example, more than three-quarters (77%) of large enterprises possessed a firewall, compared to 52% of medium-sized enterprises and 34% of small enterprises - see table 2.4.12 (below).

Table 2.4.11: Enterprises in the EU that have experienced security problems in the previous six months, November-December 2001 (% of respondents - several answers possible)

	None	Viruses	Illega access	Denial o servic	Defacemer of serve	ID misrep resentatior theft	Occupatio of domai name	Other	Do not knov no answe
Small (10-49)									
Manufacturing	57	39	2	7	5	2	1	1	1
Construction	70	23	3	5	2	2	3	1	0
Distribution	55	39	5	7	3	2	3	1	2
Services	50	43	6	10	4	3	4	1	1
Average	57	37	4	7	4	2	2	1	1
Medium (50-249)									
Manufacturing	39	56	5	10	2	1	3	0	0
Construction	61	34	8	7	5	0	1	0	0
Distribution	48	47	6	6	3	1	2	0	2
Services	37	57	6	10	4	3	5	1	2
Average	43	52	6	9	3	1	3	0	1
Large (250+)									
Manufacturing	30	63	11	9	6	5	3	3	1
Construction	45	37	8	5	6	0	12	0	1
Distribution	40	57	8	8	5	2	5	0	1
Services	37	55	9	10	2	2	6	0	2
Average	37	57	9	9	4	3	5	1	1

Source: Eurobarometer - Flash Eurobarometer 116

Table 2.4.12: Enterprises in the EU that have taken the following measures to protect against security problems, November-December 2001 (% of respondents - several answers possible)

	Firewall	Virus scanner	Intrusio detectio	SSL server site	Other	None, do not knov no answe
Small (10-49)						
Manufacturing	27	80	20	8	5	15
Construction	27	78	18	3	4	19
Distribution	36	81	23	8	4	14
Services	47	85	30	14	4	11
Average	34	81	22	9	6	14
Medium (50-249)						
Manufacturing	50	88	32	11	4	9
Construction	37	81	23	6	3	15
Distribution	57	85	31	15	4	9
Services	60	90	40	22	4	6
Average	52	87	32	13	4	9
Large (250+)						
Manufacturing	84	95	58	28	2	4
Construction	80	90	64	18	2	10
Distribution	74	91	46	28	6	7
Services	75	86	48	21	1	9
Average	77	90	50	25	5	7

Source: Eurobarometer - Flash Eurobarometer 116

2.5: SMEs AND VOCATIONAL TRAINING

The ability to create, exploit and diffuse knowledge is a fundamental asset in today's competitive economy. This topic has already been touched upon in the previous two sections that have dealt with innovation and ICT. An alternative way to disseminate information and knowledge is through human capital: more precisely, education, training and labour force mobility.

Increasing educational participation rates, student mobility and promoting lifelong learning and skills initiatives are central themes of the Community's drive towards a modern and dynamic economy. These initiatives are needed to improve the skills of the labour force, in particular in high-technology sectors in order to avoid the detrimental effects of skills shortages in such key sectors that may hinder the speed at which innovative activity and productivity grow across the whole economy.

CONTINUING VOCATIONAL TRAINING SURVEY (CVTS)

Training is one means of resolving imbalances in labour markets that arise from the introduction of new technology, as well as the changing structure of industrial organisations. The Continuing Vocational Training Survey (CVTS) provides information about training provided by enterprises to their staff. Continuing Vocational Training (CVT) is defined as training measures or activities that are paid for, at least in part, by employers. CVT allows those employed to acquire new competencies or to develop and improve existing ones; apprentices are excluded from the survey.

In 1999, some 62% of enterprises in the EU offered some form of training to their employees. This figure can be broken down between enterprises of different size classes: with a higher proportion of large enterprises providing CVT than medium-sized enterprises, which in turn provided more training than small enterprises. The vast majority (96%) of large enterprises in the EU provided CVT in 1999; the corresponding figure for small enterprises was 56%. Overall, four out of ten employees in the EU participated in CVT during 1999; 48% of those employed in large enterprises, 33% of those engaged by medium-sized enterprises and 23% of those working in small enterprises.

Limiting the analysis to those enterprises that provided CVT, the size of an enterprise did not significantly influence what proportion of its workforce undertook training. All three size class groupings reported that between 42% (medium-sized enterprises) and 49% (large enterprises) of their employees participated in training - see table 2.5.1.

Table 2.5.2 shows data on the relationship between training and innovation; in other words, enterprises that have introduced new technologies. This definition is the same as the concept used to define innovation in the CIS (see section 2.4 for more details); namely, the introduction of a new product and/or process to the enterprise in question. Of particular interest is the positive relationship between CVT and the introduction of new technologies into small enterprises. In contrast, for large enterprises the only differences were recorded in the southern Member States, where large enterprises that provided CVT were more likely to have introduced new technologies than those that did not; note that almost all large enterprises in the remainder of the EU and Norway provide training to their employees.

There was also a link between the number of employees participating in CVT courses and the introduction of new technology. For practically all pairings of countries and size classes, the share of employees participating in CVT courses was higher in enterprises that had introduced new technologies - see table 2.5.3.

Table 2.5.4 (on page 50) shows there were three main reasons why enterprises in the EU wrote a training plan, these were: as a matter of discussion between management and employees; to obtain the commitment of management to the importance of CVT; and to obtain certification/accreditation as a good training enterprise.

Table 2.5.1: Main indicators for training enterprises, 1999 (%) (1)

	EU-15	B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK	NO
Proportion of training enterprises																	
Small (10-49)	56	66	95	71	11	31	70	75	20	67	85	68	17	78	88	85	84
Medium (50-249)	81	93	98	87	43	58	93	98	48	83	96	91	46	97	99	91	97
Large (250+)	96	100	100	98	78	86	98	100	81	99	98	96	78	99	99	98	100
Average	62	70	96	75	18	36	76	79	24	71	88	72	22	82	91	87	86
Proportion of enterprises providing internal CVT courses																	
Small (10-49)	50	38	47	53	54	25	42	51	60	32	26	52	48	41	56	62	55
Medium (50-249)	68	51	80	74	54	47	56	79	75	52	45	68	58	55	79	80	78
Large (250+)	86	73	99	85	88	74	87	95	87	76	72	89	83	92	97	89	94
Average	56	42	55	59	60	33	49	58	64	41	32	57	55	47	63	68	60
Proportion of employees (only enterprises with CVT courses) participating in CVT courses																	
Small (10-49)	43	44	56	39	45	40	34	47	46	42	46	35	44	53	61	47	54
Medium (50-249)	42	46	52	33	32	39	41	49	41	46	45	31	41	45	54	50	51
Large (250+)	49	62	55	37	34	47	59	59	50	52	43	38	47	58	67	52	53
Average	47	54	55	36	34	44	51	52	47	48	44	35	45	54	63	51	53
Average hours spent in CVT courses per participant (hours)																	
Small (10-49)	33	36	38	23	39	54	33	48	38	40	29	28	37	43	30	35	28
Medium (50-249)	32	32	44	31	45	41	29	36	33	27	35	26	38	34	26	30	27
Large (250+)	30	29	41	27	38	40	39	39	30	45	42	31	39	34	32	25	40
Average	31	31	41	27	39	42	36	40	32	39	37	29	38	36	31	26	33

(1) Activity coverage is NACE Sections C to K and O.
Source: Eurostat - CVTS (NewCronos/theme3/training)

Table 2.5.2: Training/non-training enterprises without/with "new technologies" as a proportion of all enterprises with/without "new technologies", 1999 (%) (1)

	B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK	NO
With new technologies																
of which training enterprises																
Small (10-49)	83	97	85	23	42	78	92	36	85	96	:	36	94	94	:	93
Medium (50-249)	96	100	95	57	67	97	99	57	91	98	:	65	98	100	:	99
Large (250+)	100	100	99	87	90	100	100	88	98	99	:	86	99	100	:	100
Average	86	98	88	36	47	85	93	41	88	97	:	45	95	96	:	94
of which non training enterprises																
Small (10-49)	17	3	15	77	58	22	8	64	15	4	:	64	6	6	:	7
Medium (50-249)	4	0	5	43	33	3	1	43	9	2	:	35	2	0	:	1
Large (250+)	0	0	1	13	10	0	0	12	2	1	:	14	1	0	:	0
Average	14	2	12	64	53	15	7	59	12	3	:	55	5	4	:	6
Without new technologies																
of which training enterprises																
Small (10-49)	60	95	62	8	21	68	52	15	59	81	:	11	66	86	:	80
Medium (50-249)	91	97	77	29	45	91	98	39	76	94	:	34	94	99	:	95
Large (250+)	100	100	97	54	76	97	98	71	100	96	:	66	96	99	:	100
Average	64	95	65	10	24	73	57	17	63	84	:	14	70	88	:	82
of which non training enterprises																
Small (10-49)	40	5	38	92	79	32	48	85	41	19	:	89	34	14	:	20
Medium (50-249)	9	3	23	71	55	9	2	61	24	6	:	66	6	1	:	5
Large (250+)	0	0	3	46	24	3	2	29	0	4	:	34	4	1	:	0
Average	36	5	35	90	76	27	43	83	37	16	:	86	30	12	:	18

(1) Activity coverage is NACE Sections C to K and O.
Source: Eurostat - CVTS (NewCronos/theme3/training)

Table 2.5.3: Proportion of employees in all enterprises with/without "new technologies" participating in CVT courses, 1999 (%) (1)

	B	DK	D	EL	E	F	IRL	I	L	NL	A (2)	P	FIN	S	UK (2)	NO
Enterprises with new technologies																
Small (10-49)	32	46	36	7	14	29	33	18	28	43	40	10	47	60	48	52
Medium (50-249)	43	56	32	12	25	45	47	24	32	48	34	18	47	57	51	53
Large (250+)	63	54	36	29	45	62	58	49	48	47	40	40	58	71	53	56
Average	53	53	36	22	32	54	47	37	41	47	38	29	55	67	53	55
Enterprises without new technologies																
Small (10-49)	16	48	18	1	6	22	18	7	15	34	25	2	32	46	41	39
Medium (50-249)	36	48	21	7	12	35	23	16	30	37	25	7	31	51	45	43
Large (250+)	49	56	30	5	31	57	50	33	52	33	29	20	46	61	47	45
Average	29	53	23	4	14	43	23	15	28	35	26	7	35	54	46	41

(1) Activity coverage is NACE Sections C to K and O. (2) Includes a very small number of non-training enterprises due to missing values regarding "new technologies".
Source: Eurostat - CVTS (NewCronos/theme3/training)

Table 2.5.5 (overleaf) shows the types of training that were undertaken in 1999. Given that large enterprises are more likely to offer training, it is no surprise to see that they made more use of each type of training. Large enterprises made slightly more use of CVT at conferences, workshops, lectures and seminars than they did of CVT in work situations. On the other hand, the most popular form of training for small and medium-sized enterprises was CVT in work situations, followed closely by CVT at conferences, workshops, lectures and seminars. As regards other forms of training, small enterprises reported a low use of self-learning, with only 28% of enterprises in the EU using this form of training.

Table 2.5.4: Enterprise reasons for writing a training plan, 1999 (% of training enterprises) (1)

	EU-15	B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK	NO
Matter of discussion between management and employees																	
Small (10-49)	66	:	44	67	61	58	54	90	36	75	60	:	40	78	31	78	39
Medium (50-249)	73	:	62	80	63	63	67	86	55	68	70	:	36	79	37	84	28
Large (250+)	76	:	86	81	64	71	76	92	67	63	80	:	52	84	50	77	37
Average	69	:	52	73	62	61	61	89	42	72	66	:	40	79	34	79	36
To obtain commitment of management to the importance of CVT																	
Small (10-49)	43	:	11	10	14	47	49	61	34	45	36	:	13	45	28	54	27
Medium (50-249)	47	:	38	18	22	55	55	56	40	24	43	:	27	50	35	62	43
Large (250+)	55	:	45	31	17	65	68	87	51	74	51	:	44	76	35	64	57
Average	45	:	21	15	19	51	53	61	36	41	40	:	23	51	30	57	33
To obtain certification/accreditation as a good training enterprise																	
Small (10-49)	40	:	25	48	21	8	20	37	57	25	63	:	45	28	35	42	26
Medium (50-249)	40	:	35	54	27	3	25	57	53	26	53	:	53	22	26	46	27
Large (250+)	41	:	31	52	30	5	22	51	38	26	50	:	46	24	34	50	33
Average	40	:	28	50	25	6	22	42	55	26	58	:	48	26	33	43	27
To comply with the law or collective agreements																	
Small (10-49)	26	:	20	17	6	19	50	36	6	12	20	:	4	18	21	30	19
Medium (50-249)	28	:	22	17	3	20	64	36	7	22	17	:	4	29	13	25	18
Large (250+)	21	:	17	14	4	19	62	38	12	42	20	:	6	25	35	9	20
Average	26	:	20	17	4	19	57	36	7	19	19	:	4	23	20	27	19
To obtain financial assistance from the EU																	
Small (10-49)	4	:	1	1	6	2	10	0	3	6	1	:	2	3	31	2	0
Medium (50-249)	5	:	3	2	22	4	9	1	7	2	6	:	5	8	11	4	0
Large (250+)	5	:	1	0	32	6	7	5	13	4	13	:	6	3	3	3	1
Average	4	:	1	1	17	3	9	1	4	5	4	:	4	5	24	3	0
To obtain financial assistance from other external sources																	
Small (10-49)	4	:	1	1	9	1	11	6	5	3	7	:	1	3	3	3	1
Medium (50-249)	9	:	5	1	13	4	12	13	7	1	15	:	2	3	0	12	1
Large (250+)	8	:	24	0	8	8	12	10	6	0	17	:	0	7	2	10	6
Average	5	:	5	1	11	3	11	8	5	2	10	:	1	4	2	5	2
Other reasons																	
Small (10-49)	52	:	30	7	30	26	42	4	14	0	4	:	22	19	19	90	27
Medium (50-249)	42	:	17	8	16	24	32	9	14	2	9	:	21	18	31	90	21
Large (250+)	43	:	30	6	24	25	32	16	18	11	8	:	20	18	27	92	23
Average	49	:	27	7	22	26	37	5	14	2	6	:	21	19	22	90	25

(1) Activity coverage is NACE Sections C to K and O.
Source: Eurostat - CVTS (NewCronos/theme3/training)

Table 2.5.5: Types of training undertaken, 1999 (% of enterprises) (1)

	EU-15	B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK	NO
Continued vocational training in work situation																	
Small (10-49)	68	80	50	72	36	52	62	95	64	67	70	72	67	48	60	71	62
Medium (50-249)	78	91	67	84	50	61	59	94	72	74	74	66	72	68	75	91	80
Large (250+)	82	96	95	81	74	72	68	100	84	98	84	83	77	87	83	85	86
Average	71	83	55	75	45	55	62	95	67	70	72	72	69	55	64	76	65
Continued training at conferences, workshops, lectures and seminars																	
Small (10-49)	65	42	75	83	62	48	42	69	68	62	67	87	58	78	67	56	68
Medium (50-249)	76	64	89	89	81	61	50	83	79	79	81	80	68	90	81	74	82
Large (250+)	88	85	99	95	84	72	65	96	90	96	86	93	80	99	94	90	94
Average	69	47	78	85	71	52	46	73	72	68	72	86	63	82	71	62	71
Job rotation, exchanges or secondments																	
Small (10-49)	29	42	28	5	12	33	39	47	56	42	16	19	19	26	40	40	26
Medium (50-249)	32	40	35	7	12	36	43	48	63	52	23	25	24	32	55	41	35
Large (250+)	46	59	73	18	20	38	55	66	72	60	41	53	30	59	68	57	47
Average	30	43	32	6	13	34	41	48	58	45	19	24	21	29	45	41	28
Learning/quality circles																	
Small (10-49)	21	25	24	12	27	32	24	19	20	14	19	18	19	20	15	26	19
Medium (50-249)	29	36	46	22	31	37	31	33	21	21	26	23	28	25	23	35	22
Large (250+)	38	54	68	39	30	43	33	42	21	26	31	35	33	45	41	41	35
Average	23	28	30	16	29	33	27	22	21	16	22	21	23	23	18	29	20
Self-learning																	
Small (10-49)	26	19	72	17	13	29	20	23	6	34	40	28	12	53	33	33	39
Medium (50-249)	33	27	82	23	14	28	27	28	5	37	53	26	8	58	43	42	50
Large (250+)	48	52	93	32	24	39	37	61	11	50	64	38	18	82	73	65	69
Average	29	22	75	19	15	29	23	25	6	36	45	29	11	55	37	37	41

(1) Activity coverage is NACE Sections C to K and O.
Source: Eurostat - CVTS (NewCronos/theme3/training)

Table 2.5.6: Enterprises assessing their future manpower and training requirements, 1999 (%) (1)

	EU-15	B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK	NO
Proportion of enterprises assessing their future manpower and/or skills needs, 1999 (% of all enterprises)																	
Small (10-49)	44	:	72	22	59	65	27	60	42	43	23	:	69	57	55	65	60
Medium (50-249)	58	:	78	49	67	71	36	74	53	57	37	:	72	71	61	77	61
Large (250+)	68	:	91	58	79	85	49	81	68	86	53	:	79	89	77	79	74
Average	49	:	74	30	65	67	30	63	45	48	27	:	71	61	57	68	60
Proportion of enterprises assessing individuals' needs for training, skills and qualifications, 1999 (% of all enterprises)																	
Small (10-49)	42	:	39	27	29	54	26	59	8	39	34	:	39	57	46	69	58
Medium (50-249)	52	:	59	36	23	62	39	61	13	59	47	:	42	71	60	84	56
Large (250+)	59	:	84	44	15	76	51	64	7	81	64	:	53	89	74	76	64
Average	45	:	45	29	25	57	31	60	9	46	38	:	41	61	50	72	58

(1) Activity coverage is NACE Sections C to K and O.
Source: Eurostat - CVTS (NewCronos/theme3/training)

Around 50% of the enterprises in the EU assessed their future manpower and skills requirements in 1999. Large enterprises accounted for the highest proportion of enterprises carrying out such an assessment (68%), with lower shares for medium-sized enterprises (58%) and small enterprises (44%) - see table 2.5.6. This pattern was reproduced in each of the Member States, with the lowest differences between the proportion of large and small enterprises carrying out such an assessment being recorded in the United Kingdom (14 percentage points) and Portugal (10 percentage points). On the other hand, Germany and Luxembourg had the largest differences, at 36 and 43 percentage points respectively. Indeed, small enterprises in Germany reported the lowest propensity (22%) to carry out an assessment of their future manpower and skills requirements in 1999, followed closely by small enterprises from the Netherlands (23%).

A slightly lower proportion of enterprises assessed individuals' needs for training, skills and qualifications in 1999, some 45% in the EU - see table 2.5.6. Again a higher proportion (59%) of large enterprises performed such assessments, compared to medium-sized (52%) or small enterprises (42%). In Italy and Greece a higher proportion of small enterprises assessed individuals' needs for training, skills and qualifications - although, the low average propensity to make this type of assessment (9% and 25% respectively) should be borne in mind when analysing these figures. There were four countries where the majority of small enterprises assessed individuals' needs for training, skills and qualifications, namely, the United Kingdom (69%), Ireland (59%), Finland (57%) and Spain (54%).

A breakdown of the hours spent in CVT courses by the field of training shows that the most popular training subject in the EU in 1999 was computer science and computer use, which accounted for 17% of all training - see table 2.5.7. This training subject was particularly popular among small enterprises in the EU, where its share rose to 23% (and to over 30% in France and Sweden). The only other training subjects that accounted for more than 10% of total training in the EU were: engineering and manufacturing (16%); personal skills/ development (12%); and management and administration (11%) - all three of which were favoured more by large enterprises than small enterprises.

Table 2.5.7: Hours spent in CVT courses by field of training, 1999 (% of total hours in CVT courses) (1)

	EU-15	B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK	NO
Accounting, finance																	
Small (10-49)	7	4	6	12	6	4	9	3	5	10	7	8	9	9	7	6	10
Medium (50-249)	6	4	3	5	10	3	5	4	7	10	7	6	2	3	6	9	7
Large (250+)	5	8	3	2	22	7	4	3	5	9	21	4	2	4	10	4	10
Average	5	6	4	4	18	5	5	4	5	10	15	5	3	5	8	5	9
Computer science/computer use																	
Small (10-49)	23	23	17	21	12	17	31	13	14	26	18	15	13	17	32	29	24
Medium (50-249)	20	17	21	24	17	17	29	19	19	24	20	13	9	21	27	13	21
Large (250+)	15	14	12	20	18	15	17	19	10	10	16	18	10	14	20	13	21
Average	17	16	15	21	17	16	20	17	13	15	17	16	10	16	23	15	22
Engineering and manufacturing																	
Small (10-49)	13	32	9	13	36	17	10	15	15	25	29	22	19	10	9	7	11
Medium (50-249)	14	28	9	10	16	12	15	15	12	24	19	16	26	18	13	15	10
Large (250+)	17	29	15	11	21	14	15	18	10	18	13	13	18	15	17	21	11
Average	16	29	13	11	21	14	14	16	11	20	17	15	20	14	15	19	11
Environment protection, occupational health and safety																	
Small (10-49)	10	6	4	6	5	11	5	34	13	3	16	3	3	4	7	14	5
Medium (50-249)	9	7	4	4	2	9	7	20	12	6	12	4	7	4	6	13	6
Large (250+)	9	5	2	3	4	8	5	9	8	5	9	3	4	5	7	16	6
Average	9	6	3	4	3	8	5	20	10	5	11	3	4	4	7	15	6
Languages																	
Small (10-49)	3	5	2	2	2	11	3	0	4	7	1	3	2	3	1	1	1
Medium (50-249)	5	10	3	6	10	20	6	0	8	8	2	6	5	5	2	0	1
Large (250+)	4	4	3	8	4	13	7	2	8	9	2	5	4	6	4	1	2
Average	4	6	3	7	5	14	6	1	7	8	2	5	4	5	3	1	1
Management and administration																	
Small (10-49)	7	4	5	8	7	5	7	6	7	3	5	14	7	9	7	9	10
Medium (50-249)	9	7	6	10	4	7	5	8	6	7	9	16	8	8	9	13	11
Large (250+)	12	8	4	11	9	7	7	12	7	9	9	12	7	12	11	16	15
Average	11	7	5	10	8	6	7	9	7	8	8	14	7	11	10	15	13
Office work																	
Small (10-49)	2	2	2	2	4	1	2	3	3	1	1	4	3	3	1	2	2
Medium (50-249)	3	2	1	2	3	1	1	2	4	1	1	3	1	2	1	5	2
Large (250+)	2	3	3	1	3	2	1	1	3	1	1	2	1	3	1	2	3
Average	2	3	2	1	3	2	1	2	3	1	1	2	1	3	1	2	2
Personal skills/development																	
Small (10-49)	10	8	9	7	3	6	6	4	14	6	9	6	4	16	11	15	7
Medium (50-249)	11	13	8	7	5	10	8	12	13	8	16	6	10	18	16	15	6
Large (250+)	12	13	9	10	3	10	10	12	18	11	13	9	14	14	13	13	6
Average	12	12	9	9	3	9	9	10	16	10	13	7	12	15	14	14	6
Sales and marketing																	
Small (10-49)	10	8	7	12	17	8	7	15	6	14	8	16	14	14	13	12	16
Medium (50-249)	8	4	11	11	19	10	8	4	7	4	8	17	12	10	11	5	21
Large (250+)	9	9	4	11	9	10	11	5	9	7	8	13	8	11	7	8	14
Average	9	7	6	11	11	10	10	8	8	8	8	14	9	12	9	8	16
Other																	
Small (10-49)	15	8	39	17	8	20	20	7	19	5	6	9	26	15	12	5	14
Medium (50-249)	15	8	34	21	14	11	16	16	12	8	6	13	20	11	9	12	15
Large (250+)	15	7	45	23	7	14	23	19	22	21	8	21	32	16	10	6	12
Average	15	8	40	22	11	16	23	13	20	15	8	19	30	15	10	6	14

(1) Activity coverage is NACE Sections C to K and O.
Source: Eurostat - CVTS (NewCronos/theme3/training)

The number of hours spent by employees in CVT courses was usually higher in enterprises that introduced new technologies than it was in enterprises without new technologies. The only exceptions to this rule were small enterprises in the United Kingdom and large enterprises in Denmark, France and Luxembourg - see table 2.5.8.

As a proportion of paid working time, the importance of CVT courses increased slightly with the average size of enterprises. Small and medium-sized enterprises in the EU devoted an average of 8 hours out of every thousand to training in 1999, with the equivalent figure for large enterprises equal to 9 hours. Germany, Greece, Austria and the United Kingdom were the only countries where large enterprises offered less training than the EU average in terms of the number of hours spent in training per thousand hours of work - see figure 2.5.1.

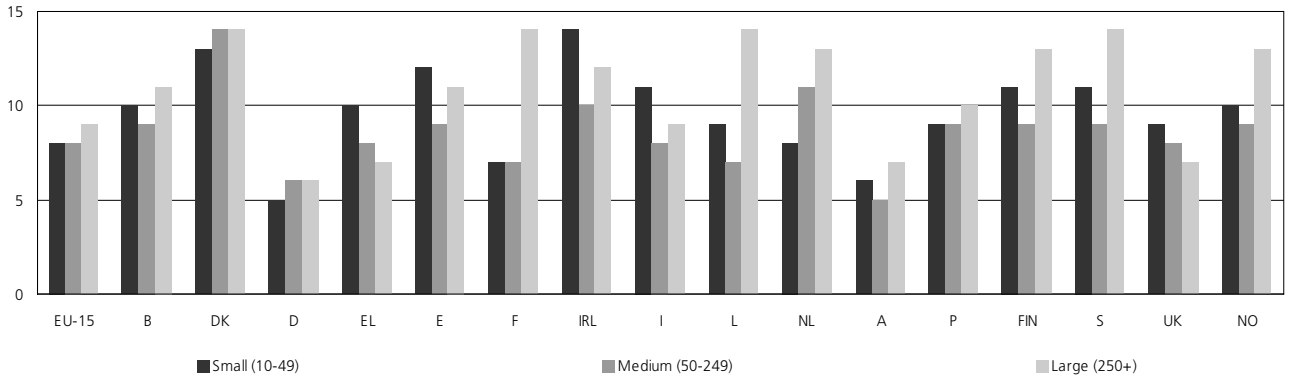
In the context of globalisation, the demographic ageing of Europe's population and the continued changes in ICT, it would appear essential that the EU's labour force should be in a position to acquire, at any time in their working life, new skills and knowledge. The figures above show that small enterprises are often less active in providing training. As such, this data supports the results obtained in the earlier sections on innovation and the introduction of ICT. Nevertheless, it shows that whilst the overall take-up of training by small enterprises is relatively low, once training has been introduced, then small enterprises are just as active as large enterprises in providing training to their workforce.

Table 2.5.8: Average hours spent in CVT courses per employee in enterprises with/without "new technologies", 1999 (units) (1)

	B	DK	D	EL	E	F	IRL	I	L	NL	A (2)	P	FIN	S	UK (2)	NO
Enterprises with new technologies																
Small (10-49)	12	18	8	2	8	10	17	7	12	16	11	4	24	22	16	15
Medium (50-249)	15	26	10	5	10	14	17	8	11	19	9	7	17	16	15	16
Large (250+)	20	15	10	10	18	21	23	15	18	21	13	16	21	24	14	24
Average	17	16	10	8	13	18	19	12	15	20	12	11	20	23	14	20
Enterprises without new technologies																
Small (10-49)	5	18	4	1	3	7	7	3	5	9	7	1	9	12	17	11
Medium (50-249)	11	21	6	4	5	10	10	6	7	12	7	3	8	13	14	10
Large (250+)	12	29	8	4	11	24	9	9	40	11	6	7	15	17	9	14
Average	8	25	6	2	6	16	8	5	12	10	6	3	10	14	12	11

(1) Activity coverage is NACE Sections C to K and O. (2) Includes a very small number of non-training enterprises due to missing values regarding "new technologies".
Source: Eurostat - CVTS (NewCronos/theme3/training)

Figure 2.5.1: Paid working time in CVT courses, 1999 (hours in CVT courses per 1,000 hours worked in enterprises giving CVT courses) (1)



(1) Activity coverage is NACE Sections C to K and O.
Source: Eurostat - CVTS (NewCronos/theme3/training)

3. SMEs IN THE CANDIDATE COUNTRIES

3. SMEs IN THE CANDIDATE COUNTRIES

STRUCTURAL BUSINESS STATISTICS (SBS)

Table 3.1 shows an overview of the main indicators for the business enterprise population in eight Candidate countries (data for Albania are also included). It is important to note that the data for the Slovak Republic does not include enterprises with fewer than 20 persons employed and so the values for this country are under-reported.

The structure of the business economy in the Candidate countries is noticeably less weighted in favour of micro enterprises when compared to the enterprise structure in the EU - see figure 3.1. Micro enterprises accounted for less than 80% of the total number of enterprises in Latvia, Lithuania, Estonia and Hungary. Within the EU, micro enterprises accounted for more than 80% of the total number of enterprises in every Member State and usually for more than 90%. Figure 3.4 (on page 57) confirms that the average size of enterprises in the Candidate countries is usually larger than in the EU. Similar conclusions can be drawn when studying the importance of each size class in terms of employment and value added. Figures 3.2 and 3.3 show the relative importance of large enterprises in most of the Candidate countries, as they accounted for more than 40% of employment in Latvia, Lithuania and Hungary and more than 50% of value added in Latvia, Lithuania, the Slovak Republic and Hungary.

Table 3.1: Business enterprise population - main indicators, 1999 (1)

	AL (2)	CZ	EE	HU	LT	LV	RO (3)	SI	SK (4)
No. of enterprises (thousands)	29	716	26	43	44	32	86	67	5
No. of persons employed (thousands)	141	3,508	:	1,566	703	444	3,777	:	263
Turnover (million EUR)	1,237	138,654	12,507	73,773	15,431	11,842	36,541	36,244	29,401
Value added (million EUR)	:	:	2,246	15,422	3,481	3,221	13,286	7,316	5,560

(1) Activity coverage is NACE Sections C, D, E, F, G, H, I and K. AL, HU, LT, LV and RO, 1998. (2) Excluding NACE Section K. (3) Excluding NACE Section G.
(4) Excluding NACE Sections C to F for number of persons employed.
Source: Eurostat - Structural Business Statistics (theme 4/SBS/sizclass)

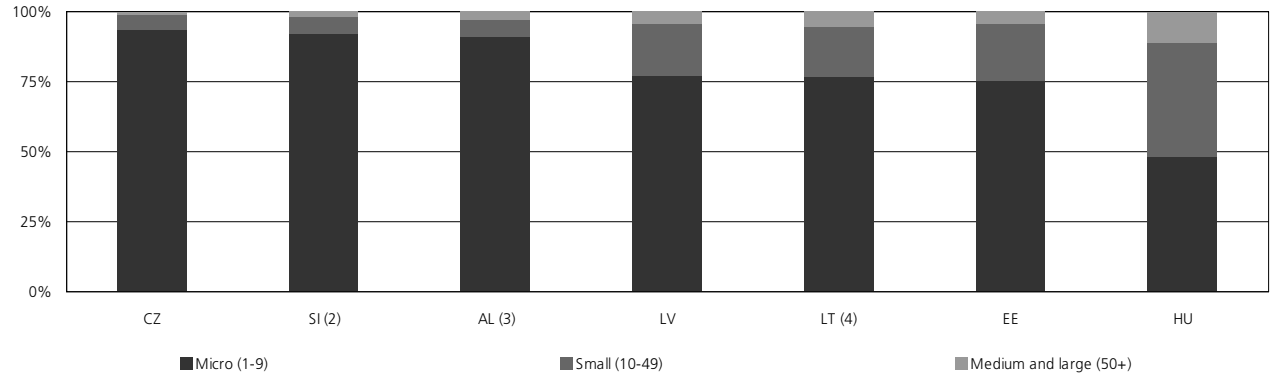
Table 3.2: Breakdown of number of enterprises by activity, 1999 (thousands) (1)

NACE label (code)	AL	CZ	EE	HU	LT	LV	RO	SI	SK
TOTAL (C to I and K)	:	716.1	26.0	43.1	44.0	31.5	357.5	67.5	5.3
Extractive industries (C)	0.1	0.3	0.1	0.1	0.1	0.0	0.3	0.2	0.0
Manufacturing (D)	3.6	136.2	4.3	14.0	7.5	4.4	41.0	15.4	2.1
Food, beverages & tobacco (DA)	1.5	6.1	0.6	2.3	1.5	0.8	10.9	:	0.4
Textiles (DB)	0.4	15.8	0.6	1.9	1.4	0.5	7.2	1.8	0.2
Leather (DC)	0.1	1.1	0.1	0.4	0.1	0.1	1.5	0.3	0.1
Wood (DD)	0.3	22.0	0.8	1.0	1.4	1.0	4.7	1.1	0.1
Pulp, paper, publishing & printing (DE)	0.1	6.9	0.4	1.1	0.8	0.6	2.8	1.2	0.1
Coke, refined petroleum & nuclear fuel (DF)	:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Chemicals & man-made fibres (DG)	0.1	1.5	0.1	0.3	0.1	0.1	1.0	0.2	0.0
Rubber and plastics (DH)	:	3.2	0.1	0.7	0.3	0.1	1.5	1.0	0.1
Other non-metallic minerals (DI)	0.2	6.7	0.1	0.6	0.4	0.2	1.3	0.4	0.1
Basic metals & fabricated metal products (DJ)	:	31.9	0.5	2.2	0.4	0.3	3.7	3.9	0.3
Machinery & equipment n.e.c. (DK)	:	6.1	0.2	1.2	0.2	0.2	0.9	1.1	0.3
Electrical & optical equipment (DL)	:	20.1	0.3	1.2	0.4	0.2	1.4	1.6	0.2
Transport equipment (DM)	:	0.7	0.1	0.3	0.1	0.1	0.5	0.1	0.1
Manufacturing n.e.c. (DN)	:	14.2	0.4	0.9	0.7	0.4	3.5	:	0.1
Electricity, gas & water supply (E)	0.0	0.7	0.3	0.3	0.2	0.2	0.3	0.1	0.1
Construction (F)	1.1	110.8	2.6	7.1	2.2	1.9	11.3	9.5	0.8
Distributive trades (G)	15.9	215.5	9.3	13.2	23.7	17.2	226.1	18.1	1.0
Hotels & restaurants (H)	4.7	38.4	1.3	3.4	2.0	1.6	10.1	5.3	0.2
Transport & communications (I)	3.6	39.5	2.2	2.5	3.3	2.2	12.2	9.2	0.3
Business services (K)	:	174.7	5.9	6.7	5.1	3.9	15.2	9.7	0.7

(1) AL, 1998. HU, total, NACE Section G, 1998. LT, 1998 except for NACE Sub-sections DA and DF, 1997. LV, 1998. RO, NACE Section I, 1998; total and NACE Section G, 1997. SI, 1998. SK, NACE Sub-sections DA and DF, 1998; excluding micro enterprises.
Source: Eurostat - Structural Business Statistics (theme 4/SBS/sizclass)

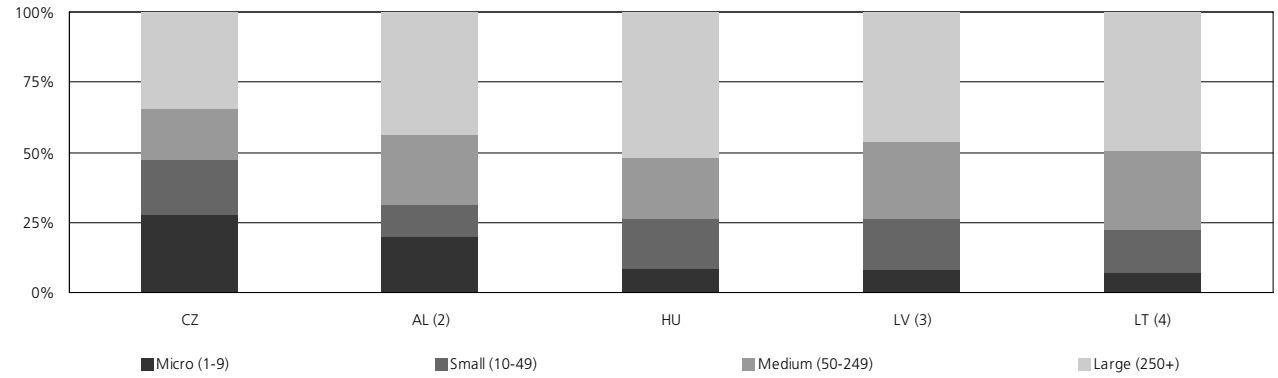
The distribution of enterprises in the Candidate countries across different sectors of the business economy showed that, as in the EU, distributive trades usually accounted for the highest number of enterprises. However, the relative weight of manufacturing in the total number of enterprises was generally much higher in the Candidate countries than it was in the EU, while business services (other than in the Czech Republic) were relatively under-represented - see table 3.2.

Figure 3.1: Breakdown of number of enterprises by enterprise size class, 1999 (%) (1)



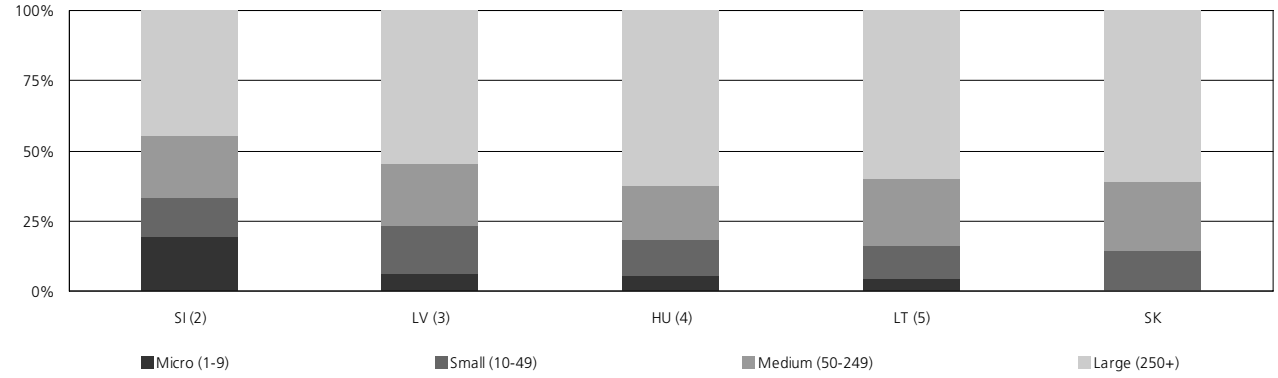
(1) Activity coverage is NACE Sections C, D, E, F, G, H, I and K. Figure is ranked on share of micro enterprises. RO and SK, not available. AL, HU, LT, LV and SI, 1998.
(2) Excluding NACE Sections E, F and H. (3) Excluding NACE Sections E, G, H and K. (4) Excluding NACE Sections H and K.
Source: Eurostat - Structural Business Statistics (theme 4/SBS/sizclass)

Figure 3.2: Breakdown of number of persons employed by enterprise size class, 1998 (%) (1)



(1) Activity coverage is NACE Sections C, D, E, F, G, H, I and K. Figure is ranked on share of micro enterprises. EE, RO, SI and SK, not available. CZ, 1999.
(2) Excluding NACE Sections E, F and H. (3) Excluding NACE Sections C, F and G. (4) Excluding NACE Sections G, H and K.
Source: Eurostat - Structural Business Statistics (theme 4/SBS/sizclass)

Figure 3.3: Breakdown of value added by enterprise size class, 1998 (%) (1)



(1) Activity coverage is NACE Sections C, D, E, F, G, H, I and K. Figure is ranked on share of micro enterprises. AL, CZ, EE and RO, not available. SK, 1999
(2) Excluding NACE Sections E, F and H. (3) Excluding NACE Sections C, F and G. (4) Excluding NACE Section C. (5) Excluding NACE Sections G, H and K.
(6) Excluding NACE Sections G and K; excluding micro enterprises.
Source: Eurostat - Structural Business Statistics (theme 4/SBS/sizclass)

Table 3.3: Breakdown of employment and value added by activity, 1999 (1)

	AL	CZ	EE	HU	LT	LV	RO	SI	SK
Extractive industries (NACE Section C)									
Share of employment									
Micro (1-9)	2.4	0.5	:	:	1.1	6.2	0.2	3.9	:
Small (10-49)	2.6	2.9	:	14.2	24.2	:	0.9	4.5	1.5
Medium (50-249)	19.3	7.8	:	31.1	65.6	:	:	13.2	8.6
Large (250+)	75.6	88.8	:	:	9.1	0.0	:	78.4	89.9
Share of value added									
Micro (1-9)	2.3	0.4	1.1	:	0.4	1.2	0.0	2.8	:
Small (10-49)	20.9	2.8	:	19.2	38.6	14.3	0.5	5.2	14.4
Medium (50-249)	5.2	8.4	:	32.8	51.8	84.5	:	16.3	4.5
Large (250+)	71.5	88.3	:	:	9.2	0.0	:	75.7	81.1
Manufacturing (NACE Section D)									
Share of employment									
Micro (1-9)	18.6	13.4	:	4.8	7.2	5.3	4.2	12.3	:
Small (10-49)	13.1	15.6	:	15.9	16.9	18.2	9.9	9.9	7.2
Medium (50-249)	32.3	24.8	:	24.6	26.3	32.6	18.7	27.0	26.4
Large (250+)	36.0	46.3	:	54.7	49.5	44.0	67.1	50.8	66.4
Share of value added									
Micro (1-9)	28.4	6.5	3.4	4.0	4.6	4.2	1.7	10.4	:
Small (10-49)	20.9	10.9	:	9.3	13.5	14.8	7.5	10.0	6.1
Medium (50-249)	43.1	24.2	:	18.6	23.3	30.0	17.5	26.0	20.8
Large (250+)	7.7	58.4	:	68.1	58.6	51.0	73.3	53.6	73.1
Electricity, gas & water supply (NACE Section E)									
Share of employment									
Micro (1-9)	0.0	0.7	:	0.3	0.4	2.0	0.1	:	:
Small (10-49)	:	4.7	:	3.1	3.3	9.0	0.5	:	1.2
Medium (50-249)	15.0	15.0	:	12.7	11.2	17.6	8.3	:	4.8
Large (250+)	:	79.5	:	83.9	85.0	71.4	91.2	:	94.0
Share of value added									
Micro (1-9)	:	0.5	1.8	0.1	0.4	0.6	0.0	0.9	:
Small (10-49)	:	2.1	10.7	1.3	1.3	2.6	0.2	6.0	0.3
Medium (50-249)	:	7.5	:	5.5	6.1	7.0	2.7	:	2.0
Large (250+)	:	90.0	:	93.1	92.2	89.8	97.0	:	97.7
Construction (NACE Section F)									
Share of employment									
Micro (1-9)	34.7	33.2	17.2	19.8	6.1	10.7	5.1	:	:
Small (10-49)	34.5	29.4	41.5	38.4	18.9	:	16.8	:	19.1
Medium (50-249)	30.8	21.2	35.2	26.0	53.0	42.9	33.3	:	43.0
Large (250+)	0.0	16.3	6.1	15.7	21.9	:	44.8	:	37.9
Share of value added									
Micro (1-9)	41.1	19.5	11.9	12.5	5.5	8.9	3.7	28.1	:
Small (10-49)	36.0	30.3	34.9	35.4	16.4	:	13.2	:	19.7
Medium (50-249)	22.8	26.3	42.6	28.9	52.4	33.3	32.7	23.3	41.4
Large (250+)	0.0	23.9	10.5	23.1	25.7	:	50.5	:	38.9
Distributive trades (NACE Section G)									
Share of employment									
Micro (1-9)	:	48.4	:	19.2	:	:	:	:	:
Small (10-49)	5.7	26.0	:	30.2	33.5	34.2	:	:	24.7
Medium (50-249)	:	12.0	:	24.4	19.4	:	:	:	39.2
Large (250+)	:	13.6	:	26.2	:	:	:	:	36.1
Share of value added									
Micro (1-9)	:	:	:	16.9	:	:	:	31.7	:
Small (10-49)	:	:	39.3	33.3	38.1	44.2	:	19.9	43.1
Medium (50-249)	:	:	:	28.7	23.9	27.3	:	21.5	34.1
Large (250+)	:	:	:	21.1	:	:	:	26.9	22.8
Hotels & restaurants (NACE Section H)									
Share of employment									
Micro (1-9)	87.9	52.7	:	21.8	:	29.9	24.3	:	:
Small (10-49)	:	30.0	:	32.2	39.8	43.1	27.2	:	30.2
Medium (50-249)	:	9.1	:	24.5	23.9	20.5	26.7	:	50.9
Large (250+)	0.0	8.3	:	21.5	:	6.6	21.7	:	18.9
Share of value added									
Micro (1-9)	:	:	9.7	8.8	:	14.7	9.3	40.4	:
Small (10-49)	:	:	31.9	8.0	35.7	25.7	19.7	21.3	23.2
Medium (50-249)	:	:	:	32.5	41.1	35.4	33.3	:	54.0
Large (250+)	:	:	:	50.6	:	24.2	37.8	:	22.7
Transport & communications (NACE Section I)									
Share of employment									
Micro (1-9)	24.1	18.6	:	3.8	9.8	6.2	:	:	:
Small (10-49)	1.5	8.5	:	7.7	13.3	11.6	:	:	3.1
Medium (50-249)	8.7	6.7	:	5.9	19.1	14.0	:	:	8.4
Large (250+)	65.7	66.1	:	82.6	57.8	68.2	:	:	88.5
Share of value added									
Micro (1-9)	:	:	:	3.0	5.4	5.4	:	19.3	:
Small (10-49)	:	:	:	4.9	10.4	12.7	:	6.1	4.5
Medium (50-249)	:	:	:	6.9	15.7	14.1	:	10.9	8.9
Large (250+)	:	:	:	85.1	68.6	67.8	:	63.7	86.5
Business services (NACE Section K)									
Share of employment									
Micro (1-9)	:	45.6	:	16.4	:	16.9	:	:	:
Small (10-49)	:	23.5	:	30.7	26.3	29.9	:	:	22.9
Medium (50-249)	:	20.3	:	25.4	34.3	37.3	:	:	49.9
Large (250+)	:	10.6	:	27.5	:	15.9	:	:	27.2
Share of value added									
Micro (1-9)	:	:	33.4	17.4	:	17.0	:	42.4	:
Small (10-49)	:	:	:	34.4	30.2	42.9	:	32.2	27.0
Medium (50-249)	:	:	:	28.5	32.1	27.5	:	18.0	49.6
Large (250+)	:	:	:	19.6	:	12.6	:	7.4	23.4

(1) AL, LT, LV and SI, 1998. AL and CZ, value added at basic prices. EE, SI and SK (for NACE Sections C to F only), number of employees. HU, NACE Section G, 1998. LV, value added for NACE Section C, 1997. RO, NACE Sections E and H, 1998. SK, NACE Section E, 1998; excluding micro enterprises.
Source: Eurostat - Structural Business Statistics (theme 4/SBS/sizclass)

Table 3.3 provides information on the breakdown of employment and value added across different sectors. As in the EU, large enterprises tended to account for the biggest share of industrial activities, with construction and service sectors characterised by a higher predominance of SMEs.

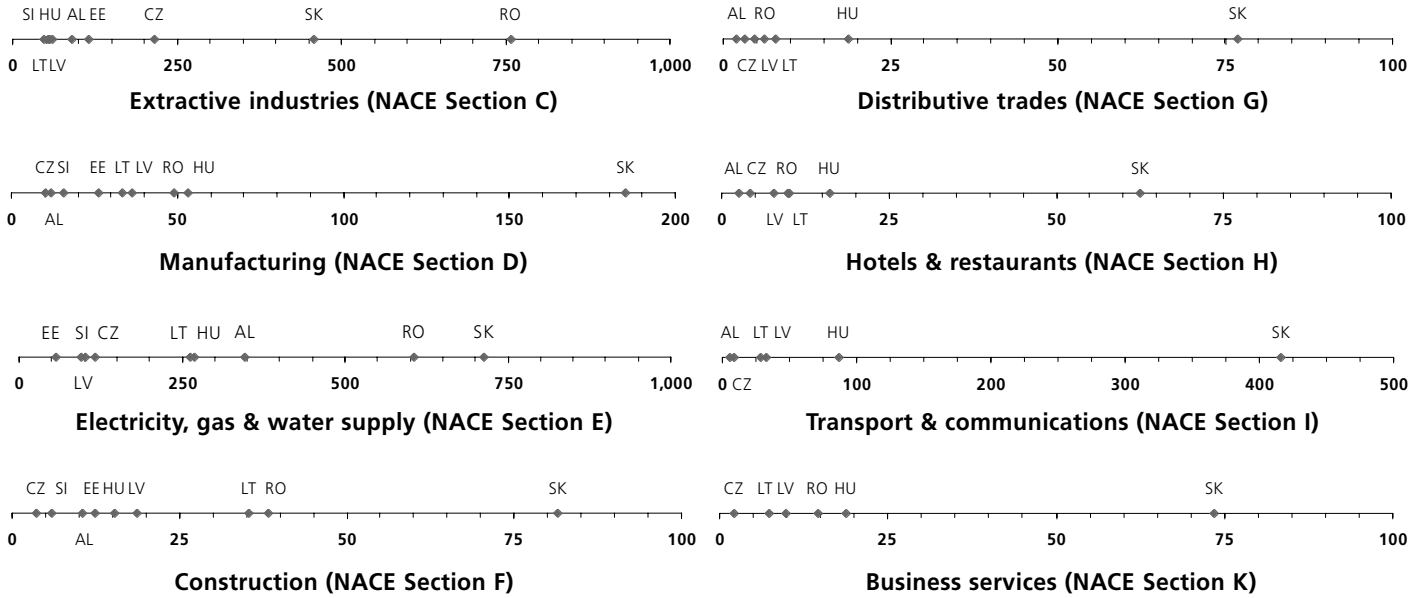
Combining the data on value added and employment, the resultant ratio is termed apparent labour productivity - table 3.4 shows a breakdown by NACE. Large enterprises appeared to be generally more productive for industrial activities, whereas there was less of a pattern for construction or services.

Table 3.4: Apparent labour productivity broken down by size class, 1999 (thousand EUR per person employed) (1)

	AL	CZ	EE	HU	LT	LV	RO	SI	SK
Extractive industries (NACE Section C)									
Micro (1-9)	1.4	9.2	5.6	:	2.8	0.9	0.6	12.8	:
Small (10-49)	11.8	11.4	:	16.5	12.5	:	3.3	20.6	69.3
Medium (50-249)	0.4	12.7	:	12.9	6.2	:	:	22.2	3.8
Large (250+)	1.4	11.7	:	:	8.0	:	:	17.3	6.5
Manufacturing (NACE Section D)									
Micro (1-9)	1.7	4.0	2.7	9.1	2.7	4.3	1.1	11.5	:
Small (10-49)	1.8	5.8	:	6.5	3.4	4.5	2.1	13.8	4.6
Medium (50-249)	1.5	8.1	:	8.4	3.8	5.1	2.6	13.2	4.3
Large (250+)	0.2	10.4	:	13.7	5.0	6.4	3.0	14.4	6.0
Electricity, gas & water supply (NACE Section E)									
Micro (1-9)	:	15.8	5.0	4.2	9.5	3.9	-0.8	19.6	:
Small (10-49)	:	11.0	6.5	7.7	3.4	3.7	3.0	14.4	7.5
Medium (50-249)	0.4	12.5	:	8.4	4.9	5.2	2.5	:	10.9
Large (250+)	:	28.5	:	21.5	9.7	16.2	7.9	:	27.5
Construction (NACE Section F)									
Micro (1-9)	2.1	3.5	3.4	4.6	4.5	6.1	1.7	9.5	:
Small (10-49)	1.9	6.2	4.1	6.7	4.3	:	1.9	:	4.4
Medium (50-249)	1.3	7.4	5.9	8.0	4.9	5.7	2.3	12.5	4.1
Large (250+)	:	8.8	8.4	10.6	5.8	:	2.7	:	4.4
Distributive trades (NACE Section G)									
Micro (1-9)	:	:	:	7.5	:	:	1.2	:	:
Small (10-49)	:	:	:	9.5	4.7	8.9	2.1	:	15.0
Medium (50-249)	:	:	:	10.1	5.1	:	:	:	7.5
Large (250+)	:	:	:	6.9	:	:	:	:	5.4
Hotels & restaurants (NACE Section H)									
Micro (1-9)	:	:	:	2.0	:	1.6	0.7	:	:
Small (10-49)	:	:	:	1.2	2.2	2.0	1.4	:	3.6
Medium (50-249)	:	:	:	6.5	4.1	5.7	2.4	:	5.0
Large (250+)	:	:	:	11.6	:	12.1	3.4	:	5.6
Transport & communications (NACE Section I)									
Micro (1-9)	:	:	:	10.7	3.8	8.9	:	:	:
Small (10-49)	:	:	:	8.5	5.5	11.3	:	:	9.5
Medium (50-249)	:	:	:	15.5	5.7	10.3	:	:	6.9
Large (250+)	:	:	:	13.7	8.3	10.2	:	:	6.4
Business services (NACE Section K)									
Micro (1-9)	:	:	:	10.3	:	8.4	:	:	:
Small (10-49)	:	:	:	10.9	6.4	12.0	:	:	7.8
Medium (50-249)	:	:	:	10.9	5.2	6.1	:	:	6.6
Large (250+)	:	:	:	6.9	:	6.6	:	:	5.7

(1) AL, LT, LV, SI, 1998. HU, NACE Section G, 1998. RO, NACE Section E and H, 1998. EE, SI and SK (for NACE Sections C to F only), value added per employee. AL and CZ, value added at basic prices per person employed.
Source: Eurostat - Structural Business Statistics (theme 4/SBS/sizclass)

Figure 3.4: Breakdown of the average number of persons employed per enterprise by activity, 1999 (1)



(1) AL, LT, LV, SI, 1998. HU, NACE Section G, 1998. RO, NACE Section G, 1997. EE, SI and SK (NACE Sections C-F only), average number of employees per enterprise.
Source: Eurostat - Structural Business Statistics (theme 4/SBS/sizclass)

CONTINUING VOCATIONAL TRAINING SURVEY (CVTS)

Table 3.5 shows a set of main indicators in relation to continuing vocational training in the Candidate countries - there is no data available for Cyprus, Malta, the Slovak Republic or Turkey.

The clear effect of training on the number of enterprises that introduced new technologies can be seen in table 3.6. As in the EU, the proportion of employees that were participating in CVT courses was generally much higher in enterprises that introduced new technologies - see table 3.7. This observation also held for the average number of hours of training per employee - see table 3.12 (on page 61) - as the introduction of new technologies was clearly linked to the average number of hours of training. The only country-size class pairing where enterprises introducing new technologies reported a lower number of average hours training than enterprises without new technologies was for large enterprises in Bulgaria.

The reasons given by enterprises in the Candidate countries for writing a training plan were similar to the responses given by enterprises in the EU - see table 3.8. The proportion of enterprises assessing their own future manpower and/or skills needs was well above the EU average in Romania and Bulgaria - see table 3.10 (overleaf). Romania was the only Candidate country to report a higher proportion of enterprises assessing individuals' needs for training, skills and qualifications than the EU average.

As regards the type of training that was provided by enterprises, there was somewhat less vocational training in work situations in the Candidate countries, whereas, on the other hand, training at conferences, workshops, lectures and seminars was used more than in the EU - see table 3.9. Greater differences are evident when looking at the actual fields in which training is provided. In relative terms, less

Table 3.5: Main indicators for training enterprises, 1999 (%) (1)

	EU-15	BG	CZ	EE	HU	LT	LV	PL	RO	SI
Proportion of training enterprises										
Small (10-49)	56	24	62	58	32	37	49	36	8	35
Medium (50-249)	81	34	84	85	51	60	70	52	13	72
Large (250+)	96	62	96	96	79	80	91	63	38	96
Average	62	28	69	63	37	43	53	39	11	48
Proportion of enterprises providing internal CVT courses										
Small (10-49)	50	31	30	22	30	8	15	33	17	31
Medium (50-249)	68	45	44	40	39	16	23	36	28	57
Large (250+)	86	70	75	77	71	42	48	63	66	71
Average	56	40	37	28	36	14	19	36	34	48
Proportion of employees (only enterprises with CVT courses) participating in CVT courses										
Small (10-49)	43	27	42	27	32	23	31	31	30	50
Medium (50-249)	42	22	42	25	22	15	22	28	19	35
Large (250+)	49	29	53	30	26	22	24	37	20	50
Average	47	28	49	28	26	20	25	33	20	46
Average hours spent in CVT courses per participant (hours)										
Small (10-49)	33	40	26	31	45	48	39	34	57	43
Medium (50-249)	32	24	24	26	38	39	33	27	40	24
Large (250+)	30	36	25	35	36	41	32	26	42	23
Average	31	35	25	31	38	41	34	28	42	24

(1) Activity coverage is NACE Sections C to K and O.
Source: Eurostat - CVTS (NewCronos/theme3/training)

Table 3.6: Training/non-training enterprises without/with "new technologies" as a proportion of all enterprises with/without "new technologies", 1999 (%) (1)

	BG	CZ	EE	HU	LV	LT	PL	RO	SI
With new technologies									
of which training enterprises									
Small (10-49)	66	80	75	47	72	63	56	12	53
Medium (50-249)	59	91	89	65	84	73	60	20	85
Large (250+)	91	98	98	85	94	92	72	52	99
Average	67	84	79	54	76	69	58	19	69
of which non training enterprises									
Small (10-49)	34	20	25	53	28	37	44	88	47
Medium (50-249)	41	9	11	35	16	27	40	80	15
Large (250+)	9	2	2	15	6	8	28	48	1
Average	33	16	21	46	24	31	42	81	31
Without new technologies									
of which training enterprises									
Small (10-49)	19	54	52	28	41	31	29	6	29
Medium (50-249)	28	78	82	44	60	52	46	9	61
Large (250+)	47	93	92	74	83	62	51	20	91
Average	22	60	56	32	44	35	31	7	38
of which non training enterprises									
Small (10-49)	81	46	48	72	59	69	71	94	71
Medium (50-249)	72	22	18	56	40	48	54	91	39
Large (250+)	53	7	8	26	17	38	49	80	9
Average	78	40	44	68	56	65	69	93	62

(1) Activity coverage is NACE Sections C to K and O.
Source: Eurostat - CVTS (NewCronos/theme 3/training)

Table 3.7: Proportion of employees in all enterprises with/without "new technologies" participating in CVT courses, 1999 (%) (1)

	BG	CZ	EE	HU	LV	LT	PL	RO	SI
Enterprises with new technologies									
Small (10-49)	18	32	19	12	15	9	17	3	23
Medium (50-249)	10	42	21	13	14	9	18	3	33
Large (250+)	33	55	34	23	22	20	32	14	56
Average	28	49	27	19	19	16	25	11	47
Enterprises without new technologies									
Small (10-49)	2	20	9	5	5	3	5	1	9
Medium (50-249)	3	27	17	6	6	4	10	1	10
Large (250+)	10	45	13	13	10	8	16	5	24
Average	6	32	12	8	6	4	9	3	14

(1) Activity coverage is NACE Sections C to K and O.
Source: Eurostat - CVTS (NewCronos/theme 3/training)

Table 3.8: Enterprise reasons for writing a training plan, 1999 (% of training enterprises) (1)

	EU-15	BG	CZ	EE	HU	LT	LV	PL	RO	SI
Matter of discussion between management and employees										
Small (10-49)	66	67	53	75	23	57	39	49	9	74
Medium (50-249)	73	67	62	76	22	57	38	56	15	80
Large (250+)	76	72	69	65	20	68	47	40	8	82
Average	69	68	59	74	22	59	40	50	10	78
To obtain commitment of management to the importance of CVT										
Small (10-49)	43	18	22	34	31	16	31	5	0	26
Medium (50-249)	47	49	45	23	45	36	34	25	7	40
Large (250+)	55	51	57	43	65	51	38	57	4	52
Average	45	34	37	32	43	30	33	22	4	36
To obtain certification/accreditation as a good training enterprise										
Small (10-49)	40	35	36	13	71	25	37	49	9	18
Medium (50-249)	40	42	62	28	68	37	47	55	25	32
Large (250+)	41	44	59	19	60	41	50	61	40	55
Average	40	39	50	18	68	32	42	53	27	29
To comply with the law or collective agreements										
Small (10-49)	26	19	19	41	17	11	27	3	22	17
Medium (50-249)	28	22	15	35	18	13	32	11	18	30
Large (250+)	21	19	21	24	28	11	29	18	31	41
Average	26	20	18	37	20	12	29	9	25	26
To obtain financial assistance from the EU										
Small (10-49)	4	0	2	1	0	1	5	2	5	0
Medium (50-249)	5	4	1	2	0	1	0	2	0	2
Large (250+)	5	4	1	3	1	1	0	2	2	2
Average	4	2	1	2	0	1	2	2	3	1
To obtain financial assistance from other external sources										
Small (10-49)	4	0	4	0	5	0	3	2	0	2
Medium (50-249)	9	3	2	0	4	3	2	3	4	6
Large (250+)	8	2	2	1	7	1	1	0	2	8
Average	5	1	3	0	5	1	3	2	2	5
Other reasons										
Small (10-49)	52	11	5	11	21	6	0	13	74	19
Medium (50-249)	42	4	5	6	35	1	0	15	79	11
Large (250+)	43	12	9	21	42	0	0	23	80	8
Average	49	10	6	11	30	3	0	15	78	14

(1) Activity coverage is NACE Sections C to K and O.
Source: Eurostat - CVTS (NewCronos/theme3/training)

Table 3.9: Types of training undertaken, 1999 (% of enterprises agreeing) (1)

	EU-15	BG	CZ	EE	HU	LT	LV	PL	RO	SI
Continued vocational training in work situation										
Small (10-49)	68	61	43	39	52	36	58	57	47	42
Medium (50-249)	78	68	54	54	54	38	67	46	66	62
Large (250+)	82	80	76	70	70	62	85	69	73	71
Average	71	65	49	43	54	38	61	56	59	53
Continued training at conferences, workshops, lectures and seminars										
Small (10-49)	65	58	81	85	69	78	74	66	34	92
Medium (50-249)	76	65	89	87	78	90	81	89	47	94
Large (250+)	88	74	94	91	86	94	89	100	65	92
Average	69	62	84	86	72	83	77	72	45	93
Job rotation, exchanges or secondments										
Small (10-49)	29	19	6	18	14	4	6	37	24	10
Medium (50-249)	32	18	11	22	15	5	12	24	34	25
Large (250+)	46	23	18	41	25	14	17	27	27	35
Average	30	19	8	20	15	5	8	34	28	19
Learning/quality circles										
Small (10-49)	21	25	6	14	9	11	12	4	26	12
Medium (50-249)	29	25	15	27	14	8	18	3	27	44
Large (250+)	38	46	23	43	25	15	27	11	28	61
Average	23	27	10	17	12	10	14	4	27	31
Self-learning										
Small (10-49)	26	32	26	25	18	17	26	21	28	24
Medium (50-249)	33	28	35	29	21	17	32	18	23	21
Large (250+)	48	38	45	37	30	27	48	23	25	24
Average	29	32	30	26	20	18	28	20	26	23

(1) Activity coverage is NACE Sections C to K and O.
Source: Eurostat - CVTS (NewCronos/theme 3/training)

Table 3.10: Enterprises assessing their future manpower and training requirements, 1999 (% of all enterprises) (1)

	EU-15	BG	CZ	EE	HU	LT	LV	PL	RO	SI
Proportion of enterprises assessing their future manpower and/or skills needs, 1999 (% of all enterprises)										
Small (10-49)	44	64	48	55	12	58	41	42	84	47
Medium (50-249)	58	73	58	58	31	63	46	48	88	65
Large (250+)	68	83	72	80	58	81	57	77	94	62
Average	49	68	52	56	20	61	43	45	88	56
Proportion of enterprises assessing individuals' needs for training, skills and qualifications, 1999 (% of all enterprises)										
Small (10-49)	42	44	29	36	18	34	13	33	54	40
Medium (50-249)	52	40	33	31	23	24	10	32	54	50
Large (250+)	59	54	39	47	43	32	9	58	58	51
Average	45	44	30	36	21	31	12	34	55	45

(1) Activity coverage is NACE Sections C to K and O.
Source: Eurostat - CVTS (NewCronos/theme3/training)

Table 3.11: Hours spent in CVT courses by field of training, 1999 (% of total hours in CVT courses) (1)

	EU-15	BG	CZ	EE	HU	LT	LV	PL	RO	SI
Accounting, finance										
Small (10-49)	7	10	12	16	14	14	16	11	11	8
Medium (50-249)	6	8	10	8	15	17	13	8	7	12
Large (250+)	5	1	6	14	9	6	9	3	3	6
Average	5	2	7	13	11	9	11	6	4	7
Computer science/computer use										
Small (10-49)	23	4	9	5	11	8	12	13	2	8
Medium (50-249)	20	18	9	7	11	5	6	9	17	11
Large (250+)	15	6	11	5	14	9	14	5	5	11
Average	17	7	11	5	13	8	12	8	5	10
Engineering and manufacturing										
Small (10-49)	13	33	6	22	14	20	10	16	10	33
Medium (50-249)	14	22	10	19	16	21	29	23	5	23
Large (250+)	17	27	15	17	27	24	24	26	6	21
Average	16	27	13	19	22	23	22	23	6	23
Environment protection, occupational health and safety										
Small (10-49)	10	2	11	4	5	3	6	1	3	5
Medium (50-249)	9	4	11	6	5	6	4	3	4	9
Large (250+)	9	3	5	2	7	7	6	2	2	7
Average	9	3	7	4	6	6	5	2	2	7
Languages										
Small (10-49)	3	9	12	7	8	3	8	4	0	10
Medium (50-249)	5	9	16	10	8	8	8	6	2	12
Large (250+)	4	5	13	6	7	18	12	8	4	12
Average	4	6	14	7	7	14	10	6	3	12
Management and administration										
Small (10-49)	7	5	6	9	5	16	9	4	6	4
Medium (50-249)	9	6	7	13	6	8	8	4	4	5
Large (250+)	12	4	8	6	5	7	9	7	3	6
Average	11	4	8	8	5	8	9	5	3	5
Office work										
Small (10-49)	2	1	1	1	1	1	2	2	0	0
Medium (50-249)	3	1	1	2	2	1	3	1	1	1
Large (250+)	2	0	1	0	2	1	2	1	0	2
Average	2	0	1	1	2	1	2	1	0	1
Personal skills/development										
Small (10-49)	10	1	7	6	2	2	3	13	19	12
Medium (50-249)	11	3	7	4	5	5	6	9	35	10
Large (250+)	12	0	9	18	4	8	7	33	62	17
Average	12	1	8	12	4	6	6	22	59	15
Sales and marketing										
Small (10-49)	10	4	8	15	14	3	12	10	31	8
Medium (50-249)	8	10	6	21	11	6	10	11	4	11
Large (250+)	9	2	7	8	8	3	5	3	2	5
Average	9	3	7	12	9	4	8	7	3	6
Other										
Small (10-49)	15	31	28	15	26	30	22	26	18	12
Medium (50-249)	15	19	23	10	21	23	13	26	21	6
Large (250+)	15	52	25	24	17	17	12	12	13	13
Average	15	47	24	19	21	21	15	20	15	14

(1) Activity coverage is NACE Sections C to K and O.
Source: Eurostat - CVTS (NewCronos/theme3/training)

training is given in the areas of computer science, environmental protection, occupational health and safety, management and administration (particularly in large enterprises) and personal skills/development in the Candidate countries than in the EU. Fields which are favoured in the Candidate countries include languages, engineering and manufacturing, as well as accounting and finance (particularly in SMEs) - see table 3.11.

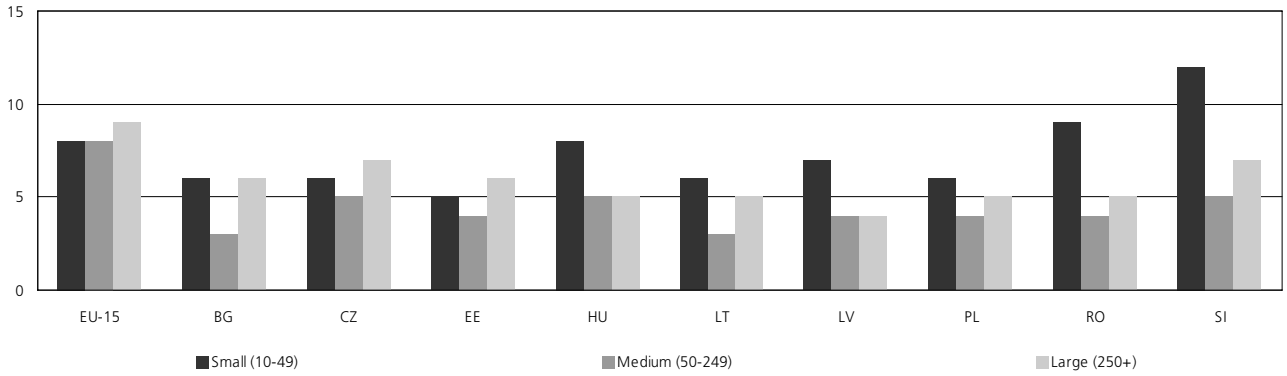
Employees in the Candidate countries generally spent less of their paid working time in CVT courses (as a percentage of their total working time) than their counterparts in the EU - see figure 3.5. There were just two cases where this observation did not hold: small enterprises in Romania (9 hours per 1,000 hours worked) and Slovenia (12 hours per 1,000 hours worked) reported figures above the EU average (8 hours per 1,000 hours worked).

Table 3.12: Average hours spent in CVT courses per employee in enterprises with/without "new technologies", 1999 (units) (1)

	BG	CZ	EE	HU	LV	LT	PL	RO	SI
Enterprises with new technologies									
Small (10-49)	7	9	7	6	5	4	5	2	13
Medium (50-249)	3	11	5	6	5	4	5	1	7
Large (250+)	7	15	12	8	7	8	8	5	11
Average	6	13	9	7	6	6	6	4	10
Enterprises without new technologies									
Small (10-49)	1	5	2	2	2	1	2	1	2
Medium (50-249)	1	6	5	2	2	1	2	0	3
Large (250+)	8	9	4	5	2	4	5	3	8
Average	4	7	3	3	2	2	3	2	5

(1) Activity coverage is NACE Sections C to K and O.
Source: Eurostat - CVTS (NewCronos/theme 3/training)

Figure 3.5: Paid working time in CVT courses, 1999 (hours in CVT courses per 1,000 hours worked in enterprises giving CVT courses) (1)



(1) Activity coverage is NACE Sections C to K and O.
Source: Eurostat - CVTS (NewCronos/theme3/training)

4. BACKGROUND INFORMATION AND METHODOLOGICAL NOTES

BACKGROUND INFORMATION

Table BI.1: Main economic indicators, 2001

	EU-15	B	DK	D	EL	E	F	IRL	I	L	NL	A	P	FIN	S	UK
GDP at current market prices (billion EUR)	8,814.8	256.6	180.4	2,063.0	130.4	650.2	1,463.7	115.4	1,216.7	21.2	424.8	210.7	122.7	136.0	234.2	1,588.8
Population (millions)	380.5	10.3	5.4	82.4	10.9	40.3	60.9	3.8	57.9	0.4	16.0	8.1	10.1	5.2	8.9	59.9
Employment (millions)	167.0	4.0	2.8	38.7	3.9	16.0	24.5	1.7	23.1	0.2	8.3	4.0	5.0	2.3	4.3	28.2

	NO	BG	CY	CZ	EE	HU	LT	LV	MT	PL	RO	SI	SK	TR	JP	US
GDP at current market prices (billion EUR)	183.0	15.2	10.2	63.3	6.2	58.0	13.4	8.5	4.0	196.7	44.4	20.9	22.3	164.6	4,631.0	11,257.0
Population (millions)	4.5	8.0	0.7	10.3	1.4	10.2	3.5	2.4	0.4	38.6	22.4	2.0	5.4	68.6	127.2	285.9
Employment (millions) (1)	2.3	2.9	0.3	4.7	0.6	3.9	1.5	1.0	0.2	14.8	8.4	0.8	2.2	21.6	66.2	149.6

(1) Forecasts for 2002, except for NO, JP and US.
Source: Eurostat - Auxiliary indicators and National Accounts aggregates (NewCronos/theme2/aux_ind; NewCronos/theme2/aggs)

Table BI.2: Exchange rates (1)

1 euro = ...	1995	1996	1997	1998	1999	2000	2001
BEF	38.5519	39.2986	40.5332	40.6207	40.3399	40.3399	40.3399
DKK	7.32804	7.35934	7.48361	7.49930	7.43552	7.45382	7.45207
DEM	1.87375	1.90954	1.96438	1.96913	1.95583	1.95583	1.95583
GRD	302.989	305.546	309.355	330.731	325.820	336.678	340.750
ESP	163.000	160.748	165.887	167.184	166.386	166.386	166.386
FRF	6.52506	6.49300	6.61260	6.60141	6.55957	6.55957	6.55957
IEP	0.815525	0.793448	0.747516	0.786245	0.787564	0.787564	0.787564
ITL	2,130.14	1,958.96	1,929.30	1,943.65	1,936.27	1,936.27	1,936.27
LUF	38.5519	39.2986	40.5332	40.6207	40.3399	40.3399	40.3399
NLG	2.09891	2.13973	2.21081	2.21967	2.20371	2.20371	2.20371
ATS	13.1824	13.4345	13.8240	13.8545	13.7603	13.7603	13.7603
PTE	196.105	195.761	198.589	201.695	200.482	200.482	200.482
FIM	5.70855	5.82817	5.88064	5.98251	5.94573	5.94573	5.94573
SEK	9.33192	8.51472	8.65117	8.91593	8.80752	8.44519	9.25511
GBP	0.828789	0.813798	0.692304	0.676434	0.658735	0.609478	0.621874
NOK	8.28575	8.19659	8.01861	8.46587	8.31041	8.11292	8.04844
BGN	0.08787	0.22515	1.90157	1.96913	1.95584	1.94792	1.94819
CYP	0.591619	0.591904	0.582628	0.577418	0.578850	0.573924	0.575893
CZK	34.6960	34.4572	35.9304	36.3196	36.8843	35.5995	34.0685
EEK	14.9900	15.2763	15.7150	15.7530	15.6466	15.6466	15.6466
HUF	164.545	193.741	211.654	240.573	252.767	260.045	256.591
LTL	5.23203	5.07899	4.53616	4.48437	4.26405	3.69516	3.58229
LVL	0.689537	0.699605	0.659401	0.660240	0.625601	0.559227	0.560060
MTL	0.461431	0.458156	0.437495	0.434983	0.425773	0.404138	0.403007
PLN	3.17049	3.42232	3.71545	3.91784	4.22741	4.00817	3.67214
ROL	2,661.81	3,922.19	8,111.50	9,984.88	16,345.20	19,921.80	26,004.00
SIT	154.880	171.778	180.996	185.958	194.473	206.613	217.980
SKK	38.8649	38.9229	38.1061	39.5407	44.1229	42.6017	43.3001
TRL	59,912	103,214	171,848	293,736	447,237	574,816	1,102,430
JPY	123.012	138.084	137.077	146.415	121.317	99.475	108.682
USD	1.30801	1.26975	1.13404	1.12109	1.06578	0.92361	0.89563

(1) Exchange rates of first 11 euro-zone currencies fixed since January 1999 and Greece since January 2001.
Source: Eurostat - Auxiliary indicators (NewCronos/theme2/aux_ind)

METHODOLOGICAL NOTES - EUROSTAT SOURCES

STRUCTURAL BUSINESS STATISTICS (SBS)

The most important data source used in this publication is the Structural Business Statistics (SBS) database. The data is collected within the legal framework of Council Regulation (EC, EURATOM) No. 58/97 of December 1996 concerning structural business statistics[16]. SBS size class data are stored in five main tables in Eurostat's reference database (NewCronos), containing annual data that starts in 1995. Four of the tables are based on employment size class breakdowns for industry, construction, distributive trades and services. There is an additional table that is provided for distributive trades (NACE Section G) that has information broken down by turnover size class - see table MN.1.

The statistical unit for size class data is the enterprise. The following economic activities have been included in the target population: NACE Sections C to K. The target population is enterprises of all size classes, although not all Member States transmit data to Eurostat that relates to this statistical unit or population - table MN.2 summarises the main deviations.

(16) Available at http://www.forum.europa.eu.int/irc/dsis/bmethods/info/data/new/legislation/sbs.html

Table MN.1: SBS data collected by size class, according to Council Regulation 58/97

Activity	NACE	Size classes	NACE detail
Industry	Sections C, D & E	Number of persons employed broken down into the following groups: 1-9, 10-19, 20-49, 50-99, 100-249, 250-499, 500-999, 1000+	3-digit level
Construction	Section F	Number of persons employed broken down into the following groups: 1-9, 10-19, 20-49, 50-99, 100-249, 250-499, 500-999, 1000+	3-digit level
Distributive trades	Section G	Number of persons employed broken down into the following groups: 1, 2-4, 5-9, 10-19, 20-49, 50-99, 100-249, 250-499, 500-999, 1000+	3-digit level
Distributive trades	Section G	Annual turnover in million EUR broken down into the following groups: 0 to <1, 1 to< 2, 2 to <5, 5 to <10, 10 to <20, 20 to <50, 50 to <200, 200 and more	3-digit level
Services	Section H, I, & K	Number of persons employed broken down into the following groups: 1-4, 5-9, 10-19, 20-49, 50-99, 100-249, 250-499, 500-999, 1000+	NACE aggregates as defined in the SBS Regulation for a limited number of indicators

Source: Eurostat - Structural Business Statistics (NewCronos/theme 4/SBS)

Table MN.2: Main deviations from standard statistical unit (an enterprise with one person employed or more) - SBS

	Year	Population covere
INDUSTRY		
Germany	1995 onwards	Enterprises with 20 persons employed or more
Spain	1995 onwards	Enterprises with 1 employee
France	1995	Enterprises with 20 employees or more
Ireland	1995 onwards	Enterprises with 3 persons employed or more
United Kingdom	1995	Enterprises with 20 persons employed or more
Estonia	1995	Section D data were broken down by Divisions for enterprises with 20 and more employees, except investment data which were broken down by Divisions for enterprises with 50 and more employees
Hungary	1998	Enterprises with 5 persons employed or more
Slovak Republic	1995 - 1998	Population covered is enterprises with 20 persons or more employed and enterprises with less than 20 persons employed which were considered statistically important, based on expert judgement (1995 and 1996) or with a turnover larger than 2.3 million EUR (from 1997 onwards)
CONSTRUCTION		
Germany	1995 onwards	Enterprises with 20 persons employed or more
France	1995	Enterprises with 20 employees or more
Ireland	1995 onwards	Enterprises with 20 persons employed or more
United Kingdom	1995	Enterprises with 20 persons employed or more
Hungary	1998	Enterprises with 5 persons employed or more
Slovak Republic	1995 - 1998	Population covered is enterprises with 20 persons or more employed and enterprises with less than 20 persons employed which were considered statistically important, based on expert judgement (1995 and 1996) or with a turnover larger than 2.3 million EUR (from 1997 onwards)
DISTRIBUTIVE TRADES		
Netherlands	1996 onwards	Employment size classes are defined in terms of employees Size class 1 has been approximated with size class 0 employee Size class 2-4 has been approximated with size class 1-4 employees
Portugal	1996 onwards	Employment size classes are defined in terms of employees
Estonia	1995	Enterprises with 20 employees or more
Hungary	1998	Enterprises with 5 persons employed or more
Slovak Republic	1995 - 1998	Population covered is enterprises with 20 persons or more employed and enterprises with less than 20 persons employed which were considered statistically important, based on expert judgement (1995 and 1996) or with a turnover larger than 2.3 million EUR (from 1997 onwards)
SERVICES		
Netherlands	1996 onwards	Employment size classes are defined in terms of employees Size class 1-4 has been approximated with size class 0-4 employees
Portugal	1996 onwards	Employment size classes are defined in terms of employees.

Source: Eurostat - Structural Business Statistics (NewCronos/theme 4/SBS)

Sometimes there are discrepancies between the standard variable definitions, as defined for SBS data, and the definitions actually used by the Member States. The table below summarises the main deviations.

Table MN.3: Main deviations from the standard variable defnitions - SBS size class data

	Year	The variable ...	... contains the varial
INDUSTRY			
Czech	1998	Total cost of goods and services	Variable is not observed directly but is estimated
Republic	1995 - 1998	Personnel costs	Definition is not completely harmonised
	1995 - 1998	Number of enterprises	Estimated as average number of enterprises (result of a sample survey), calculated on the basis of the information concerning the length of the activity of the unit; this means that an enterprise active only a part of the year is not counted as 1 but as a percentage of the year (e.g. 3 months=0.25 of an enterprise)
Hungary	1998	Number of persons employed	Variable from the annual labour survey
	1998	Number of employees	Variable from the monthly labour survey
	1998	Number of persons employed and employees	Employees represents 99.5% of the number of persons employed
Slovenia	1995 - 1998	Value added at basic prices and factor cost	Definitions are not completely harmonised
CONSTRUCTION			
Denmark	1995 - 1996	Number of employees	Number of employees in full time equivalent units
Sweden	1996	Number of persons employed and employees	Number of persons employed: self-employed are not included; for enterprises with less than 10 employees variable is equal to the full-time equivalent number of employees; persons employed and employees are therefore very close
Czech	1995 - 1998	Personnel costs	Definition is not completely harmonised
Republic	1995 - 1998	Number of enterprises	Estimated as average number of enterprises (result of a sample survey), calculated on the basis of the information concerning the length of the activity of the unit; this means that an enterprise active only a part of the year is not counted as 1 but as a percentage of the year (e.g. 3 months=0.25 of an enterprise)
Hungary	1998	Total cost of goods and services	Variable is not observed directly but is estimated
	1998	Number of persons employed	Variable from the annual labour survey
	1998	Number of employees	Variable from the monthly labour survey
	1998	Number of persons employed and employees	Employees represents 99.5% of the number of persons employed
Slovenia	1995 - 1998	Value added at basic prices and factor cost	Definitions are not completely harmonised
DISTRIBUTIVE TRADES			
Denmark	1995 - 1996	Number of employees	Number of employees in full time equivalent units
Czech Republic	1995 - 1998	Number of enterprises	Estimated as average number of enterprises (result of a sample survey), calculated on the basis of the information concerning the length of the activity of the unit; this means that an enterprise active only a part of the year is not counted as 1 but as a percentage of the year (e.g. 3 months=0.25 of an enterprise)
Hungary	1998	Number of persons employed	Variable from the annual labour survey
Slovak Republic	1995 - 1998	Number of persons employed	Number of employees
Slovenia	1995 - 1998	Value added at factor cost	Definition is not completely harmonised
SERVICES			
Sweden	1996	Number of persons employed	Number of employees
Czech Republic	1995 - 1998	Number of enterprises	Estimated as average number of enterprises (result of a sample survey), calculated on the basis of the information concerning the length of the activity of the unit; this means that an enterprise active only a part of the year is not counted as 1 but as a percentage of the year (e.g. 3 months=0.25 of an enterprise)
Hungary	1998	Number of persons employed	Variable from the annual labour survey
Slovak Republic	1995 - 1998	Number of persons employed	Number of employees
Slovenia	1995 - 1998	Value added at factor cost	Definition is not completely harmonised

Source: Eurostat - Structural Business Statistics (NewCronos/theme 4/SBS)

COMMUNITY INNOVATION SURVEY (CIS)

The second Community Innovation Survey (CIS2) was launched in the EEA Member States in 1997/1998. All the participating countries agreed on a common set of methodology and a core questionnaire aimed at providing comparable, harmonised and representative data on a pan-European scale. In general, either the National Statistical Institute or a Ministry was directly responsible for the survey at a national level.

The statistical unit is the enterprise. The reference year for the survey is 1996 for most of the countries; the data for Norway and Portugal refer to 1997. The following economic activities have been included in the target population: NACE Sections D and E and selected service sectors (including wholesale trade, transport, telecommunications, financial intermediation, computer and related activities and engineering services). In Spain and Italy the survey was only carried out for NACE Section D (manufacturing). In France, NACE Division 51 (wholesale trade) was not surveyed. The only difference between the thresholds used in manufacturing and service sectors are those used for small enterprises, which are defined as having 20-49 employees in the manufacturing sector (NACE Sections D and E) and 10-49 employees in the service sector.

Table MN.4: Size class criteria as applied in CIS2

Size class	Manufacturing	Services
Small	20 to 49	10 to 49
Medium	50 to 249	50 to 249
Large	250 +	250 +

Source: Eurostat - CIS2 (NewCronos/theme9/innovat)

E-COMMERCE PILOT SURVEY

This pilot study on e-commerce was undertaken by 13 of the Member States and Norway (data were not collected for Belgium, nor for France). The surveys were mainly carried out during the first half of 2001, with the reference period for all variables generally the date at which the survey was conducted. This was not the case for the turnover data (2000 as its reference year) and the indicators concerning the use of intranets, EDI and web access (end of 2000 as a reference period).

The target population in activity terms was NACE Sections D, G, H, I, J and K. In size class terms the target population was enterprises with 10-49 persons employed (small enterprises) and 50 or more persons employed (medium-sized and large enterprises). In practice, most Member States provided this compulsory data and an optional split of the medium-sized and large enterprise size class between enterprises with 50-249 persons employed and enterprises with 250 or more persons employed. Activity breakdowns and enterprise size class breakdowns were not cross-tabulated.

As this was a pilot study the coverage in terms of the target population and the detailed list of questions asked by each statistical authority varied. Where differences exist in relation to the target population these are noted in table MN.5 below.

CONTINUING VOCATIONAL TRAINING SURVEY (CVTS)

The purpose of this survey is to obtain information about training that is provided by enterprises for their employees (excluding apprentices and trainees), in particular training measures and activities which have as their primary objective the acquisition of new competencies or the development and improvement of existing ones. Continuing vocational training courses can be designed and managed either by the enterprise itself or by organisations that are not part of the enterprise.

The target population for the survey is enterprises with 10 or more employees within NACE Sections C to K and O. The reference period is the calendar year 1999. Micro data were sent to Eurostat by the Member States and Eurostat then compiled aggregated results.

This second survey (CVTS2) was also conducted in Norway and nine of the Candidate countries (Bulgaria, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland (Pomorskie region), Romania and Slovenia).

Table MN.5: Main deviations from the target population - e-commerce pilot survey

	Date of survey	Low end f employme threshol	Exceptions
DK	October 2000	5	Includes NACE Section F and Division 93 and excludes Section J
D	February/March 2001	1	Excludes NACE Sections D, I, J & K
EL	June/September 2001	10	
E	February 2001	1	
IRL	June 2001	10	Excluding Division 37
I	April/May 2001	10	Excludes NACE Section J
L	May /June 2001	10	
NL	July 2000	5	Includes NACE Section F
A	March 2001	10	
P	June 2001	10	Includes NACE Sections C & F
FIN	January/February 2001	5	Includes NACE Section F and excludes Section J
S	April/May 2001	10	
UK	January 2001	10	Includes NACE Section F
NO	November 2000	5	Includes NACE Sections C & F, Divisions 40 & 93 and Groups 92.2 & 92.4; excludes Section J

Source: Eurostat - E-commerce database

METHODOLOGICAL NOTES - OTHER EUROPEAN COMMISSION SOURCES

BANK FOR THE ACCOUNTS OF COMPANIES HARMONISED - BACH

The BACH database was created in 1987. It contains harmonised annual accounts for 11 European countries based on the Fourth Council Directive (78/660/EEC of July 1978), as well as data for Japan and the USA.

Most countries provide data about 15 months after the reference period. The information contained in BACH is broken down for 23 different economic activities (classified according to NACE); 3 different enterprise size classes; and up to 94 accounting items. The size class criteria are applied as detailed in the table below - note they are not based on employment criteria.

Table MN.6: Size class criteria as applied in the BACH database

Size class	Europea countrie (million EU	Japar (million JP'	USA (million US
Small	Turnover < 7	Capital < 100	Small an medium tot
Medium	7 =< Turnover < 40	100 < Capital < 1,000	Balance-sheet total<25
Large	Turnover >= 40	Capital >= 1,000	Balance-sheet total>25

Source: European Commission - Directorate-General Economic and Financial Affairs, BACH database

Within the database, assets and liabilities are given as a share of the balance sheet total. Profit and loss account items and statements of investment and depreciation are presented as a share of turnover. The balance sheet total, value added and turnover are given in national currency terms. The number of enterprises and employees are also provided. For more information, please consult:
http://europa.eu.int/comm/economy_finance/indicators/bachdatabase_en.htm

EUROBAROMETER

Eurobarometer is a collection of surveys that are carried out for the European Commission - they are managed and organised by the Press and Communication Directorate-General. Among the studies, there are regular surveys and special one-off surveys, of which Flash Eurobarometers are an example. These are ad-hoc, telephone interviews that are conducted at the request of any service of the European Commission or one of the other EU institutions. For more information, please consult:
http://www.europa.eu.int/comm/public_opinion/archives_en.htm

Flash Eurobarometer 78 - use of the Internet and economic development of SMEs

Conducted on behalf of the Information Society Directorate-General, this survey was carried out between 10 and 23 March 2000. Some 4,731 enterprises made up the sample. Each of them employed less than 250 persons and belonged to a set of key activities that were identified as being particularly important for Internet development. The sample was drawn in the 15 Member States for both manufacturing and service activities and for three enterprise size classes - micro (1-9 employees), small (10-49 employees) and medium-sized enterprises (50-249 employees).

Flash Eurobarometer 100 - Innovation

Conducted on behalf of the Enterprise Directorate-General, this survey was carried out between 23 April and 11 May 2001. Some 3,004 managers of enterprises that employed at least 20 persons made up the sample. The sample was drawn in the 15 Member States for four activity breakdowns (manufacturing, construction, distributive trades and services) and for three enterprise size classes - small (20-49 employees), medium-sized (50-249 employees) and large (250+ employees) enterprises.

Flash Eurobarometer 116 - E-commerce

Conducted on behalf of the Economic and Financial Affairs Directorate-General, this survey was carried out between 27 November and 17 December 2001. Some 8,141 managers of European enterprises made up the sample, each of them representing an enterprise with at least 10 persons employed. The survey was conducted in the 15 Member States with the sample drawn for three economic activities (industry and construction; distributive trades; transportation and services) and for three enterprise size classes - small (10-49 employees), medium-sized (50-249 employees) and large (250+ employees) enterprises.

GLOSSARY OF TERMS RELATING TO BUSINESS STATISTICS

Apparent labour productivity: value added at factor cost/ number of persons employed (expressed in thousand EUR per person employed); care should be taken in the interpretation of this ratio between different activities and countries because of the use of a simple head count for the labour input measure, as a proxy for the volume of work done; values may exceptionally be negative.

Average personnel costs: personnel costs/number of employees (expressed in thousand EUR per employee).

Broadband: generally defined as a communication system with a cable bandwidth greater than 2Mbps.

B2B e-commerce: business to business e-commerce (see below). It may be conducted directly between buyer and seller or through a third party online intermediary.

Cable modem: a device that interfaces between coaxial cable television/voice channel and home computing equipment in order to provide Internet access over the cable television network. Holds the potential for providing high speed Internet access.

Dial-up: pertains to a telephone connection in a system of many lines shared by many users. A dial-up connection is established and maintained for a limited duration of time. Dial-up lines are sometimes called switched lines.

Digital subscriber line: a high-bandwidth (broadband), local loop technology to carry data at high speeds over traditional (copper) telephone lines.

E-commerce: transactions conducted over Internet Protocol-based networks and over other computer mediated networks. The goods and services are ordered over those networks, but the payment and the delivery of the good or service may be conducted on or off-line.

Electronic Data Interchange (EDI): is a standard, structured format for exchanging electronic data. Traditionally it was used over special telecommunication networks but is now also being used over Internet.

Electronic mail or e-mail: the electronic transmission of messages from one computer to another.

E-marketplaces: specialised e-commerce sites for businesses that allow buyers and sellers to trade with each other.

Employees: are defined as those persons who work for an employer and who have a contract of employment and receive compensation in the form of wages, salaries, fees, gratuities, piecework pay or remuneration in kind; employees include part-time workers, seasonal workers, persons on strike or on short-term leave, but exclude those persons on long-term leave and voluntary workers.

Enterprise: an enterprise is the smallest combination of legal units that is an organisational unit producing goods or services, which benefits from a certain degree of autonomy in decision-making, especially for the allocation of its current resources; an enterprise carries out one or more activities at one or more locations; an enterprise may be a sole legal unit.

Global system for mobile communication (GSM): is a digital mobile telephone system. It is the most widely used wireless communication technology in Europe at the present time and is also used elsewhere in the world. GSM operates at the 900 MHz, 1800 MHz or 1900 MHz frequency band.

Gross operating rate: gross operating surplus/turnover.

Gross operating surplus: is the surplus generated by operating activities after the labour factor input has been recompensed; it can be calculated from value added at factor cost less personnel costs.

Information and Communications Technologies (ICT): covers information technology (computer hardware and software; end user, office, network and data communications equipment) and telecommunications equipment and services.

Internet: protocol based networks including the WWW.

Intranet: is an Internet Protocol based network that that is not part of the Internet. Normally Intranets belong to businesses or administrations and permit the persons working in those organisations to share and exchange information in the same way as over the Internet but with access restricted to internal users.

Integrated Service(s) Digital Network (ISDN): is a tele-communication service that turns a traditional (copper) telephone line into a high speed digital link. ISDN services can simultaneously transmit voice, data and video.

Number of persons employed (employment): is defined as the total number of persons who work in the observation unit (inclusive of working proprietors, partners working regularly in the unit and unpaid family workers), as well as persons who work outside the unit who belong to it and are paid by it (e.g. sales representatives, delivery personnel, repair and maintenance teams); it includes persons absent for a short period (e.g. sick leave, paid leave or special leave), and also those on strike, but not those absent for an indefinite period; it also includes part-time workers who are regarded as such under the laws of the country concerned and who are on the pay-roll, as well as seasonal workers, apprentices and home workers on the pay-roll.

Off-line/on-line: used to describe whether or not someone is accessing the Internet at a particular moment in time.

Personnel costs: the total remuneration, in cash or in kind, payable by an employer to an employee (regular and temporary employees as well as home workers) in return for work done by the latter during the reference period; personnel costs also include taxes and employees' social security contributions retained by the unit as well as the employer's compulsory and voluntary social contributions.

Purchases of goods and services: include the value of all goods and services purchased during the accounting period for resale or consumption in the production process, excluding capital goods the consumption of which is registered as consumption of fixed capital. The goods and services concerned may be either resold with or without further transformation, completely used up in the production process or, finally, be stocked. Included in these purchases are the materials that enter directly into the goods produced (raw materials, intermediary products, components), plus non-capitalised small tools and equipment. Also included are the value of ancillary materials (lubricants, water, packaging, maintenance and repair materials, office materials) as well as energy products. Services paid for during the reference period are also included regardless of whether they are industrial or non-industrial. Also included are payments made for non-industrial services such as legal and accountancy fees, patents and licence fees (where they are not capitalised), insurance premiums, costs of meetings of shareholders and governing bodies, contributions to business and professional associations, postal, telephone, electronic communication, telegraph and fax charges, transport services for goods and personnel, advertising costs, commissions (where they are not included in wages and salaries), rents, bank charges (excluding interest payments) and all other business services provided by third parties.

Secure server: in the context of the Internet, is a server that supports security protocols such as SSL (Secure Socket Layer) that are used to encrypt data to reduce the risk of non-authorised persons accessing the information. For example encryption can be seen as an important way of increasing customer confidence when providing personal or financial information over the Internet and is therefore regarded as a facilitator of e-commerce.

Turnover: comprises the totals invoiced by the observation unit during the reference period, corresponding to market sales of goods or services supplied to third parties; turnover includes all duties and taxes on the goods or services invoiced by the unit with the exception of the VAT invoiced by the unit vis-à-vis its customer and other similar deductible taxes directly linked to turnover; it also includes all other charges (transport, packaging, etc.) passed on to the customer, even if these charges are listed separately in the invoice; reductions in prices, rebates and discounts as well as the value of returned packing must be deducted.

Value added at factor cost: can be calculated from turnover, plus capitalised production, plus other operating income, plus or minus the changes in stocks, minus the purchases of goods and services, minus other taxes on products which are linked to turnover but not deductible, minus the duties and taxes linked to production; alternatively it can be calculated from gross operating surplus by adding personnel costs; income and expenditure classified as financial or extra-ordinary in company accounts is excluded from value added.

Wage adjusted labour productivity: (value added at factor cost/personnel costs) * (number of employees/number of persons employed) * 100 (expressed as a percentage).

World Wide Web (www): is an Internet service that uses HTTP as its protocol to transmit and receive data, linking documents locally and remotely. Documents are stored on web servers and usually take the form of web pages that are viewed using a web browser. The fundamental format is a text-based document embedded with HTML tags and hypertext links. Hypertext methods can be applied not just to text but also to images, video and sound files.

ABBREVIATIONS

COUNTRIES

EU	European Union
EU-15	Fifteen Member States of the European Union
EUR-11	Original eleven countries to join the euro-zone
B	Belgium
DK	Denmark
D	Germany
EL	Greece
E	Spain
F	France
IRL	Ireland
I	Italy
L	Luxembourg
NL	the Netherlands
A	Austria
P	Portugal
FIN	Finland
S	Sweden
UK	the United Kingdom
EEA	European Economic Area
NO	Norway
JP	Japan
US(A)	United States of America
BG	Bulgaria
CY	Cyprus
CZ	Czech Republic
EE	Estonia
HU	Hungary
LV	Latvia
LT	Lithuania
MT	Malta
PL	Poland
RO	Romania
SK	Slovakia
SI	Slovenia
TR	Turkey
AL	Albania

WEIGHTS AND MEASURES

EUR	Euro
ECU	European Currency Unit
BEF	Belgian Franc
DKK	Danish Krone
DEM	German Mark
GRD	Greek Drachma
ESP	Spanish Peseta
FRF	French Franc
IEP	Irish Pound
ITL	Italian Lira
LUF	Luxembourg Franc
NLG	Dutch Guilder
ATS	Austrian Schilling
PTE	Portuguese Escudo
FIM	Finnish Markka
SEK	Swedish Krone
GBP	Pound Sterling
NOK	Norwegian Krone
JPY	Japanese Yen
USD	US Dollar
BGN	New Bulgarian Lev
CYP	Cyprus Pound
CZK	Czech Koruna
EEK	Estonian Kroon
HUF	Hungarian Forint
LTL	Lithuanian Litas
LVL	Latvian Lats
MTL	Maltese Lira
PLN	New Polish Zloty
ROL	Romanian Leu
SIT	Slovenian Tolar
SKK	Slovak Koruna
TRL	Turkish Lira

Other abbreviations

BACH	Bank for the Accounts of Companies Harmonised
B2B	Business to Business
CIS	Community Innovation Survey
CVT	Continuing Vocational Training
CVTS	Continuing Vocational Training Survey
DSL	Digital Subscriber Line
GDP	Gross Domestic Product
EDI	Electronic Data Interchange
EMU	European Monetary Union
FP5	Fifth Research Framework Programme
G7	Group of 7 (industrial countries)
ICT	Information and Communication Technology
ID	Identification
IPO	Initial Public Offering (of shares in a company)
ISDN	Integrated Services Digital Network
LFS	Labour Force Survey
Mbps	Megabytes per second
NACE	Nomenclature statistique des Activités économiques dans la Communauté Européenne (Statistical Classification of economic activities in the European Community)
n.e.s.	not elsewhere specified
OECD	Organisation for Economic Co-operation and Development
OJ	Official Journal (of the European Communities)
PC	Personal Computer
PDF	Portable Document Format (computer file type that is read by Acrobat Reader)
R&D	Research and Development
RTD	Research and Technology Development
SBS	Structural Business Statistics
SME	Small and medium-sized enterprises
SSL	Secure Socket Layer

Symbols

:	not available
-	not applicable

NACE REV. 1

The following is a reduced list of NACE Rev. 1 activity codes and headings.
Only codes that are used in this publication have been detailed in the list that follows.

Sections

Sections C to E - Industry*
Sections G to K - Services*
Section A - Agriculture, hunting and forestry
Section B - Fishing
Section C - Mining and quarrying (extractive industries)
Section D - Manufacturing
Section E - Electricity, gas and water supply
Section F - Construction
Section G - Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods
Section H - Hotels and restaurants
Section I - Transport, storage and communication
Section J - Financial intermediation
Section K - Real estate, renting and business activities
Section L - Public administration and defence; compulsory social security
Section M - Education
Section N - Health and social work
Section O - Other community, social and personal service activities
Section P - Private households with employed persons
Section Q - Extra-territorial organizations and bodies

Divisions

Division 37 - Recycling
Division 40 - Electricity, gas, steam and hot water supply
Division 51 - Wholesale trade and commission trade, except of motor vehicles and motorcycles
Division 60 - Land transport; transport via pipelines
Division 61 - Water transport
Division 62 - Air transport
Division 65 - Financial intermediation, except insurance and pension funding
Division 72 - Computer and related activities
Division 93 - Other service activities

Groups

Group 64.2 - Telecommunications
Group 74.2 - Architectural and engineering activities and related technical consultancy
Group 92.2 - Radio and television activities
Group 92.4 - News agency activities

* These are not official NACE levels, but aggregates that are used in this publication.